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ANNUAL REPORT

OF

THE PRESIDENT

OF

CORNELL UNIVERSITY

1895-96

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CORNELL UNIVERSITY

FOURTH

ANNUAL REPORT

OF

PRESIDENT SCHURMAN

1895-96

WITH APPENDICES CONTAINING REPORTS OF THE DEAN
OF THE GENERAL FACULTY, THE DEAN OF THE
SCHOOL OF LAW, THE LIBRARIAN, ETC.

ITHACA, N. Y.
PUBLISHED BY THE UNIVERSITY
1896

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PRESIDENT'S REPORT

FOR 1895-96

To the Board of Trustees:

The President of the University has the honor to submit the following Report for the year 1895–96. The Report covers the period from September 1, 1895, to August 31, 1896.

TRUSTEES

The Board has been greatly strengthened by the increase in its membership described in the last Report. As the general policy of the University is now pretty well established, and the Executive Committee attends to all routine business, the chief function of the Board of Trustees is to augment and care for the endowments of the University. Investments are made by the Finance Committee with the co-operation of the Treasurer; and the thorough examination of the finances of the University conducted at the first meeting of the enlarged Board furnished a further demonstration of the care, wisdom, and remarkable success with which the endowments are managed. As the result of this examination was highly satisfactory to the Board, it was in the same degree complimentary to the Treasurer and to the Finance Committee, and especially to its chairman, Mr. George R. Williams, who devotes a large portion of his own time to this important service to the University. It has been the custom of the Finance Committee in the past to consult the Executive Committee in regard to investments involving any considerable change in the established policy or practice; and their responsibilities will in the future be intelligently shared by a still larger body, as quarterly statements of changes made in the investments of the University with all practicable details are now sent to every member of the Board of Trustees.

. With such provision for the safe investment of funds, the Trustees are free to address themselves to the problem of securing additional endowments. This task is now an urgent and a pressing one. With the advance of civilization the rate of interest is constantly declining; and with the progress of knowledge the cost of maintaining first-class institutions of learning is constantly increasing. Millions of dollars are needed to-day where hundreds of thousands would have sufficed a generation ago. If Cornell University is to grow into the fulness of the stature of her magnificent ideal, if she is even to maintain the position she has already won in this state and nation, it is imperative that large additional endowments be secured. To stand still is to retrograde; other institutions will advance with the times. Cornell needs many new professorships and some new colleges; she has almost no endowments for the aid of needy but meritorious students on whom even in aristocratic England, the University of Oxford bestows a quarter of a million dollars annually; and she is still without commons and still without a single hall of residence or dormitory for the young men who in ever increasing numbers choose her for their *alma mater*. Under these circumstances the President would most respectfully but urgently beg the Trustees to consider how the condition of the University may be improved. The consideration of the question is especially opportune at a time when trade and industry, which have been so long depressed, show a good prospect of revival and great expansion.

The Board received its final enlargement, through legislative enactment, as follows:—

The Honorable CHARLES AUGUSTUS WIETING, Commissioner of Agriculture, *ex-officio*, appointed May 1, 1896; term of office 3 years.

The three newly created trusteeships remaining vacant were filled by the election of the following gentlemen:

George Bliss, for the term expiring in 1898,

Charles Sidney Shepard, for the term expiring in 1899,

Robert Henry Treman, for the term expiring in 1897.

Mr. Bliss is from New York City; Mr. Shepard is from Oswego Co., N. Y.; Mr. Treman, who had served one term as Alumni Trustee, is from Ithaca.

Regular vacancies in the Board were filled as follows:

Andrew Carnegie, elected by the Board, succeeded Andrew Carnegie, term expired, June 17, 1896.

Joseph C. Hendrix, elected by the Board, succeeded Joseph C. Hendrix, term expired, June 17, 1896.

DeForest Van Vleet, elected by the Alumni, succeeded Robert H. Treman, term expired, June 17, 1896.

Charles Gray Wagner, elected by the Alumni, succeeded Daniel E. Salmon, term expired, June 17, 1896.

Horace White, elected by the Board, succeeded Horace White, term expired, June 17, 1896.

George R. Williams, elected by the Board, succeeded George R. Williams, term expired, June 17, 1896.

THE FACULTY

Since the close of the academic year one of the members of the original Faculty of the University has passed away. Albert Nelson Prentiss died on the 14th day of August after a protracted illness. During the last two years the condition of his health compelled him to abandon work for short periods on different occasions, and on the 24th of February he tendered his resignation to the Board. Constrained by the sad circumstances to grant Professor Prentiss the relief he asked for, the Trustees adopted a minute expressing their high appreciation of his long and faithful services to the University and, in order that his official connections with the Faculty might not be severed, they appointed him Professor of Botany Emeritus. Suitable action was also taken by the Faculty, in whose tribute stress was laid upon the important help rendered by Professor Prentiss, as one of the earliest members of that body, in the establishment of the ideals upon which the University was founded. Mr. Prentiss was appointed Professor of Botany, Horticulture, and Arboriculture in October, 1868; and since that date he has served the University continuously with the utmost conscientiousness, devotion, and loyalty. An unusually large number of his students have attained eminence as botanists, and Professor Prentiss had the teacher's keen delight in these epistles known and read of all men. Next to the work of his professorship he enjoyed most the care of the ornamental grounds of the University, which were in his charge from the beginning, and which owe to his devotion, good taste, and constant supervision much of the acquired beauty they now possess. Professor Prentiss was a man of gentle and refined nature, modest and retiring, yet self-respecting and dignified, and, while he never enjoyed that robustness of constitution which is generally associated with aggressive energy, he was devoted to botanical science, he was a conscientious teacher, and he wrought faithfully for the welfare of the University. In his death the community suffers the loss of a true and loyal gentleman.

The last Report gave some account of Dr. Ernst Ritter, who had resigned his position in the faculty of the University of Goettingen to accept an assistant professorship of Mathematics at Cornell. But Dr. Ritter never reached Ithaca. He was prostrated by typhoid fever on board the steamship and died soon after landing in New York City. It is a melancholy satisfaction to record that the action taken by the Trustees under these distressing circumstances brought some comfort to Dr. Ritter's disconsolate parents and friends and was not without its effect in strengthening the mutual esteem of the representatives of science and letters in Germany and America.

The Faculty of Law regrets the loss of Professor Henry W. Hardon. Though his stay at Cornell was brief he impressed himself upon the community as a gentleman of great ability, generous scholarship, and thorough knowledge of the law. The best wishes of his colleagues and friends attend him. He returns to New York City as Professor of Law in Columbia University.

Lieutenant George Bell, Jr., completes his term as Professor of Military Science and Tactics at the close of the summer vacation. He has been a remarkably successful incumbent of the office, working smoothly with his colleagues, commanding the respect and esteem of the students, and infusing new interest and enthusiasm into all the military exercises of the department, which has made marked progress under his administration.

The University continues to furnish professors to other institutions from the ranks of its assistant professors and instructors. The head of every department concerned regrets the loss of an efficient co-adjutor; but men of ability and attainments of the first rank will not be permanently contented with subordinate positions, and unless every member of the instructing staff can be made a full professor, the incumbents of the lower offices cannot be expected to remain indefinitely with the University. Their places may be filled by others who in turn will be wanted for higher positions elsewhere. Nor is this circulation of teachers, which from a financial standpoint is absolutely necessary, without some advantage to the University. What higher honor than to be the nursing mother of the faculties of other institutions? Of the five who have received promotions in other colleges this year, all but one are graduates of Cornell. First in rank is Dr. Oliver F. Emerson, Assistant Professor of Rhetoric and English Philology, who resigned his position to accept a professorship in Adelbert College. Dr. Lewis A. Rhoades, Instructor in German, was appointed Assistant Professor of the German Language and Literature, in charge of the department, in the University of Illinois. Mr. W. K. Hatt, Instructor in Civil Engineering, was appointed Associate Professor of Applied Mechanics in Purdue University. Mr. C. P. Matthews, Instructor in Physics, became Associate Professor of Electrical Engineering, in Purdue University. Mr. G. C. Watson, Assistant Agriculturist in the Agricultural Experiment Station, became Professor of Agriculture in the Pennsylvania State College.

Professor Dyer, who acted as Professor of Greek in the absence of Professor Wheeler, fulfilled the high expectations which were awakened by the announcement of his coming. As he returns to Oxford he may feel that his treatment during the past year of the literary aspects of Hellenic culture will long be remembered by his pupils at Cornell.

Having been appointed historical expert to the Venezuela Commission Professor Burr was in March, 1896, relieved of duty at the University. After investigations in the Congressional Library at Washington he proceeded to Europe where he has since been engaged in an examination of the Dutch archives. As the work he undertook for the Commission could not be completed by the opening of the academic year, the Trustees, on Professor Burr's application, extended his leave of absence till the close of the fall term. His courses on Mediæval History were in the Spring term taken by Professor Morse Stephens who consents to carry them in the fall term also, and provision has been made for giving the courses in Greek and Roman History; for the seminaries it was not possible to effect any substitution. The University has consented to this dislocation of its programme from a conviction of the importance, possibly even to the nation, of the historical investigations which the Venezuela Commission wished to have made and from a desire to enable Professor Burr, whose services at the University have been highly esteemed, to accept the compliment conferred upon him in the offer of the appointment. The work to which he has been called demands qualifications of the highest order—facility in languages, knowledge of history, acquaintance with the original sources and skill in using them, delicate discrimination, just reasoning, and a grave sense of responsibility in drawing conclusions—and it is an honor to any historical faculty to have one of its members selected to discharge such a function.

The appointments made in the course of the year will be found in Appendix I. Reference will be made elsewhere to the appointments in the State Veterinary College. Special attention is here called to the following:

JAMES SETH was elected Sage Professor of Moral Philosophy. Mr. Seth was born in Edinburgh, Scotland, in 1860. Completing his school course at George Watson's College in that city, he entered the University of Edinburgh, where he studied until 1881, paying particular attention to Mental and Moral Philosophy. Mr. Seth graduated with First Class Honors in Philosophy, taking the Degree of Master of Arts; in the following December he won the J. E. Baxter Scholarship in Philosophy, open to graduates of the University of Edinburgh; and in the autumn of 1882 he won also the Ferguson Scholarship in Mental Philosophy, open to graduates of all Scottish Universities. Mr. Seth then studied for three semesters at the Universities of Leipsig, Jena, and Berlin. From 1883 to 1885 he served as assistant to the Professor of Logic and Metaphysics in the University of Edinburgh, lecturing to both juniors and seniors, and in 1885 he conducted independent classes in Logic and Psychology and in the History of Philosophy. In 1896 he was appointed Professor of Philosophy in Dalhousie College and University, Halifax, Canada. In 1892 he was called to the chair of Philosophy in Brown University, in which he has continued up to the present. Mr. Seth has for the past eleven years been a contributor to Mind, the Philosophical Review, the International Journal of Ethics, and the New World. He assisted Professor Calderwood in the revision and re-writing of Fleming's Vocabulary of Philosophy, taking entire charge of the Logical articles, and writing many of those on Psychology and Metaphysics. His separately published works are an essay on Freedom as Ethical Postulate, published in 1891 ; and in 1894 a larger work entitled A Study of Ethical Principles, which has passed through two editions.

NATHANIEL SCHMIDT was recommended by the executive committee of the Board for appointment as Professor of Semitic Languages and Literatures. Mr. Schmidt was born in Hudiksvall, Sweden, in 1862. His secondary education was obtained in the Real-skola and in the Gymnasium of his native city. In 1882 he entered the University of Stockholm, and for two years devoted himself particularly to botany, biology, and mathematics. In 1884 he came to America, and entered the Hamilton Theological Seminary, from which he graduated in 1887, at the same time receiving the degree of A.M. from Colgate University. After serving a year as pastor of the First Swedish Baptist Church of New York City, he became Associate Professor of Semitic Languages and Hellenistic Greek in the Hamilton Theological Seminary. The year 1890 Mr. Schmidt spent on leave of absence, pursuing advanced studies in Ethiopic, Assyrian, Arabic, and Theology at the University of Berlin, and in December of that year he was elected to a full professorship of Semitic Languages and Literatures in the Hamilton Theological Seminary and in Colgate University, a position in which he has continued up to the present time.

Mr. Schmidt is a member of the American Oriental Society, and of the Society for Biblical Literature and Exegesis.

MR. GEORGE F. ATKINSON was appointed Professor of Botany, with special reference to Comparative Morphology and Mycology. Mr. Atkinson was born in Monroe County, Michigan, in 1854. His secondary education and the early portion of his collegiate training were obtained at Olivet College, Michigan. In January, 1884, Mr. Atkinson entered the Junior class in Cornell University, and, completing his course here, graduated Ph.B. in 1885. He was elected Fellow in Botany in Cornell for 1885–6, but resigned to accept an assistant professorship of Entomology and General Zoology in the University of North Carolina, where, being in 1887 promoted to an associate professorship, he remained until 1888. During this time he made special researches in the field of trap-door spiders and insects, and published numerous papers on the subject. In 1888 Mr. Atkinson was elected Professor of Botany and Zoology in the University of South Carolina and Botanist of the South Carolina Agricultural Experiment Station. In 1889 he became Professor of Biology in the Alabama Polytechnic Institute and Alabama Agricultural and Mechanical College, and Biologist of the Alabama Agricultural Experiment Station. In 1892 he was elected Assistant Professor of Cryptogamic Botany in Cornell University, and in the following year Associate Professor, a position in which he has continued up to the present year. He is a member of the Botanical Society of America, member of the Society for the Promotion of Agricultural Science, and of the New York State Science Teachers' Association, and corresponding member of the Torrey Botanical Club. He is also Fellow of the American Society for the Advancement of Science; during the past year he has been Secretary and for 1896–97 he has been elected Vice-President of Section G. of this Society. He is Associate editor of the Botanical Gazette, and of the Botanisches Centralblatt and Centralblatt für Bakteriologie und Parasitenkunde. Mr. Atkinson is the author of a work on the Biology of Ferns. Among his more important papers are his Monograph of the Lemaneaceæ of the United States; Contribution to the Biology of the Organism of Leguminous Tubercles; Cercosporæ of Alabama: Some Erysipheæ of Carolina and Alabama; Oedema of the Tomato;

numerous bulletins on diseases of the Cotton Plant; and Contribution to a knowledge of the Prunicolous Species of Exoasceæ.

Edwin Hamlin Woodruff was appointed Professor of Law, the subjects of his chair being Contracts, Insurance, Carriers, and Persons. Mr. Woodruff graduated LL.B. from the Cornell Law School in 1888, presenting as graduation thesis an Historical Sketch of Chancery Jurisdiction in Massachusetts, the publication of which, shortly after, by the London Law Quarterly Review at once established its author's reputation among legal scholars. In the same year Mr. Woodruff was admitted to the New York Bar. For two years succeeding he was instructor in English in Cornell University. During the year 1890–91 he was in Europe. He returned to take the position of librarian of Stanford University, which he held for two years. He was then made acting professor of law in Stanford University, and in 1895–96 he became professor of law in the same institution. Mr. Woodruff has been a frequent contributor to the Library Journal, the official publication of the American Library Association, and he has also been a contributor to Scribner's Magazine, the Nation, and other general publications. Jointly with Professor Huffcut he is the author of American Cases on Contract, now used as a text-book in the Cornell College of Law, and the law schools of Stanford and Michigan Universities, the University of Pennsylvania, the University of the City of New York, and a number of other law schools. He has now in preparation an elementary text-book on law.

Ralph Stockman Tarr was appointed Professor of Dynamic Geology and Physical Geography. Mr. Tarr was born in Gloucester, Massachusetts, January 15, 1864. He obtained his secondary education in the public schools of Gloucester, and in 1881 he entered Harvard University. Here he spent four of the next ten years, but not consecutively, taking his degree, B.S., in 1891. In the meantime he spent six years in outside work, at first in the employ of the United States Fish Commission and the Smithsonian Institution, but from 1887 on, in the United States Geological Survey. While on the Survey, Mr. Tarr did work in New Mexico and in Texas. In the fall term of 1891, he began work as an assistant in Harvard. In January, 1892, however, he was called to an assistant professorship of Geology and Mineralogy in Cornell University where he has since remained. His publications include his Economic Geology of the United States, first published in 1893, which reached its second edition in 1894; his Elementary Physical Geography, first published in November, 1895, and already in its third edition; and numerous magazine articles upon kindred topics. In the fall of the current year is to appear a third volume, his Elementary Geology. Mr. Tarr is a member of the American Geological Society, American Geographical Society, and of the honorary society, Sigma Xi.

Captain WALTER S. SCHUYLER is, by an order of the War Department, detailed as Professor of Military Science and Tactics at Cornell University, to relieve 1st Lieutenant George Bell, Jr. Captain Schuyler will report in person at the University on or about September 12, 1896.

PROFESSORIAL GRADES, SALARIES, AND PENSIONS

The Board adopted the recommendations made in the last Report touching associate and assistant professorships. The former grade has been abolished, and the term of office of the present incumbents is to expire in the year 1900. The three normal grades of assistant professorships have been reduced to one normal grade and an extraordinary grade to which in exceptional cases persons may be appointed—but by the full Board only—whose services are deemed of unusual value to the University. A readjustment of salaries was of course necessary, and the term of office in all cases was fixed at five years. All assistant professorships in the University are to be adjusted to the new classification not later than August, 1898. In the interest both of assistant and associate professors now in the service of the University, it would seem expedient to have the adjustments to the new grades made at the earliest possible date; and the President would recommend that the matter be taken into consideration as soon as practicable after the opening of the academic year 1896–97.

Some of the inequalities in the salaries of professors to which attention was called in the last Report as involving not only invidious discrimination but real injustice have been corrected during the year by action of the Trustees. The Board, however, have no intention of adopting a general policy of equalization. They adhere to the view that their relations with every member of the instructing staff are of the nature of an individual contract. It no doubt results that incumbents of the same grade of office generally receive the same compensation ; but this is a consequence, and not the determining principle, of the action of the Board in dealing with each individual appointee.

The subject of the superannuation and pensioning of professors was discussed at length in the last Report. The matter was carefully considered first by a special committee, next by the Executive Committee, and finally by the Board of Trustees. The result of these prolonged deliberations appears in the following resolution which was unanimously adopted by the Board at their meeting on March 4th :

> *Resolved*, That while the Board deem it unwise to use the general funds of the University, or gifts not specially made for the purpose, to pension professors, they cordially endorse the scheme of a Professorial Pension Fund outlined in the President's Report, and express their willingness to receive contributions from former students and from friends of the University for the establishment of such Fund (which should be increased by annual contributions from all professors desiring to avail themselves of the advantage thereof), and they express their willingness to invest the moneys thus obtained with the endowment of the University, and manage them without cost to the benefactors or beneficiaries.

Under this resolution the University will receive, set apart, and invest with its endowments any gifts that may be designated for a Professorial Pension Fund. The object should appeal to graduates and old students who feel special obligations to the men who have opened to them the gateways of knowledge and enlarged and enriched their lives. Professors belong to a class who have consented to forego the advantages of lucrative employment that they may devote themselves to the cultivation of science and letters and the instruction of youth ; and those who have personally profited by their labors, and the larger public who appreciate them, will, it is hoped, enable Cornell University to provide a retiring allowance for those members of the Faculty whom age has incapacitated for effective service. The co-operative scheme endorsed by the Board does not endanger the individual's own thrift and self-help ; it stimulates and supplements them.

STUDENTS

The total number of persons receiving instruction at the University in 1895–96 was 2022. Exclusive of those attending the Summer Schools and the Winter School in Agriculture, there were regularly enrolled 1702 students. This is the largest attendance ever registered excepting in the year 1893–94, which was the last year of low entrance requirements for the great majority of undergraduates and of free tuition to all graduates. The charge for instruction in the Graduate Department has reduced the attendance from 231 in 1893–94 to 145 in 1895–96; but this department is now on a sounder basis than formerly and has better students; and it may be expected that the University, with its present Faculty and facilities for instruction and investigation, will attract its full share of graduate students. Nothing could be of so much aid in bringing about this result as the endowment of fellowships; and a gift of $10,000 would establish one, which would be an investment and memorial within the reach of persons of moderate means. Apart from the Graduate Department, the University will continue for some years to be affected by the large and almost universal advance in the requirements for admission to the several courses. These important changes will be fully described elsewhere. In this connection it will suffice to state generally that provision has been made for the raising of the standard of admission to every course in the University (excepting one course in which no change is needed) by additions which in most cases involve one extra year of preparatory training and in many cases two years; and that this general advance in the requirements for entrance began in 1894, has already been effected for some courses, and is now in progress for others, and is to be completely accomplished by 1898 for all courses. As a result of these important, extensive, and very significant changes there will be demanded for matriculation into every course in the University a training equivalent to a good high school course. The effect upon the attendance may be estimated from the fact that prior to 1894 so high a standard of preparation was not exacted of more than one sixth of the entire body of undergraduates! The result thus far is that the number of undergraduates declined from 1570 in the climacteric year of 1893–94 to 1501 in 1894–95 when the standards for admission to the courses in Architecture, Mechanical Engineering and Electrical Engineering were raised, but the loss was almost made up in 1895–96 (though the process of raising the standards still continued) when 1557 undergraduates were enrolled. The following table, which embraces the last five years, has been prepared to exhibit in detail the attendance for the years preceding and succeeding 1894, when the entrance requirements began to be raised for undergraduates and tuition fees were first charged to graduates:

	1891–92	1892–93	1893–94	1894–95	1895–96
Arts	142	141	138	133	146
Philosophy	100	110	121	136	153
Science	82	89	89	115	144
Letters	94	82	85	65	50
Law	122	176	197	191	207
Civil Engineering	139	129	116	122	121
Mechanical Engineering	251	295	239	212	201
Electrical Engineering	250	260	332	289	295
Architecture	68	78	97	76	67
Agriculture (4 year course)	22	22	25	24	30
Medical Preparatory	12	11	5	6	4
Optional and Special	122	137	126	132	139
Graduate Department	177	170	231	188	145
Total in University	1538	1700	1801	1689	1702

This table presents some interesting phenomena. It shows, in the first place, that the technical courses, whose requirements for admission were advanced in 1894, have not yet recovered from the effects of that change,—the attendance in the course in Architecture having fallen from 97 in 1893–94 to 67 in 1895–96, and in Mechanical and Electrical Engineering from 571 in 1893–94 to 496 in 1895–96; both of them having in 1895–96 a smaller attendance than in 1894–95 (which suggests that the effects may not yet be exhausted) and both of them showing in 1895–96 an attendance almost identical with that of 1891–92.

The figures for the Graduate Department have already been explained. Very noticeable is the increase in the number of students in the School of Law. But perhaps the most remarkable showing is that for the general courses, in which the attendance has increased from 422 in 1892–93 to 493 in 1895–96, though the total number of students enrolled in the University for these two years differed only by two, being in the one case 1700 and the other 1702. This augmentation too has been continuous, the figures being 422 in 1892–93, 433 in 1893–94, 449 in 1894–95, and 493 in 1895–96. That is to say there were 60 more students in the Academic Department in 1895–96 than there were in the fat year of 1893–94. It is instructive to observe the courses which these students select. The course in Letters, which has now been abolished, has been running down ever since 1889–90. The course in Science shows the largest annual gain: 144 in 1895–96 as against 115 in 1894–95. The course in Arts, which shows an increase of 13 over 1894–95, stands about where it was in 1891–92. On the other hand the course in Philosophy—the course which prescribes one ancient and one modern language—has gained fifty per cent in attendance since 1891–92, and enrolled 153 students in 1895–96 as against 110 in 1892–93 when the total attendance at the University was the same.

The short Winter Course in Agriculture was attended by 83 persons, showing an increase of 6 over the year previous. There were enrolled in the Summer School, including the Summer School of Law, 237 persons, which is a decrease of 35 as compared with the corresponding figures for 1894–95. If these 320 transient students (i. e. both for Agriculture and Summer School) be added to the list of regularly enrolled students, as indicated in the preceding paragraphs, there will be a grand total of 2022 persons who received instruction at the University during the year 1895–96.

The number of students (not counting the recipients of advanced degrees) admitted to graduation in each of the courses for the period from 1891–92 to 1895–96 is as follows:

	1891–92	1892–93	1893–94	1894–95	1895–96
Arts	36	39	26	29	31
Philosophy	25	26	24	25	43
Science	24	26	21	24	23
Letters	33	30	13	19	12
Law	41	62	65	76	61
Civil Engineering	32	25	25	29	23
Mechanical Engineering	44	47	38	36	40
Electrical Engineering	46	46	43	51	69
Architecture	6	8	13	18	19
Agriculture	8	3	4	4	5
Total	295	312	272	311	326

The following table shows the geographical distribution of the new students, 548 in number, who entered the University as undergraduates in 1895–96. The table includes, along with new students entering the freshman class, those entering upon advanced standing, and also, by themselves, those entering the Graduate Department. It appears that of undergraduates 57 per cent, and of graduates 21 per cent, come from New York State. The distribution of students in the School of Law is almost identical with the general average for the undergraduate body. The general courses and the course in Architecture are most largely recruited from New York State, only 28 per cent of the enrollment being from other states. The smallest proportion of New York students, outside the Graduate Department, is found in the course in Civil Engineering, where it is 43 per cent; Electrical Engineering follows close upon it with 45 per cent, while—oddly enough—Mechanical Engineering shows 53 per cent. Altogether, it will be seen, 43 per cent of undergraduates and 79 per cent of graduates entering Cornell University for the first time come from other states than New York or from foreign countries.

RESIDENCE OF NEW STUDENTS ENTERING THE UNIVERSITY IN 1895–96

	New York State	U. S. excepting N. Y.	Outside U. S.	Per cent from N. Y.	Per cent from U. S. exc. N. Y.	Per cent Foreigners
General Courses—(Arts, Phil., Sci., Letters)	124	48	--------	72.09	27.91	--------
Agriculture	6	1	2	66.67	22.22	11.11
Architecture	10	4	--------	71.43	28.57	--------
Civil Eng.	19	23	2	43.18	52.27	4.55
Mech. Eng.	35	31	--------	53.03	46.97	--------
Electrical Eng.	31	37	1	44.93	53.62	1.45
Medical Prep.	1	--------	--------	100.00	--------	--------
Optional	11	15	1	40.74	55.56	3.70
Special	18	27	2	38.30	51.07	10.63
Law	58	40	1	58.58	40.40	1.02
Total Undergraduates	313	226	9	57.12	41.24	1.64
Graduates	9	31	3	20.93	72.09	6.98

The method of admitting students on approved credentials is the rule at Cornell University. As against five per cent of new students entering the University by means of examinations, 52 per cent are admitted on school certificates and New York Regents' diplomas and 21 per cent on college certificates, while of the remainder 15 per cent consists of law students for whose method of entrance statistics are not available, and 7 per cent of special students who are admitted, without examination, on the recommendation of heads of departments. The method of admission on approved credentials is a great convenience to students; and it must be remembered that the students of Cornell University come from practically every state and territory in the Union, and that even in the 57 per cent whose residence is in New York State every county of the State is represented. There are two other considerable advantages of the system. In the first place, it insures equitable and considerate treatment for every matriculant individually,—his scholastic record being furnished by the person who knows him best, his teacher. And, secondly, by this recognition of the work of the high schools and academies, the University is brought into close, intelligent, and mutually beneficial intercourse with them. Everything that makes for freer and more cordial relations between the secondary and the higher institutions of learning should be sedulously cultivated. At Cornell University especially, which has no private academies in affiliation with it, but draws four fifths of all its students from the public schools, which are the people's schools, this object is of unusual significance, and fortunately it is also congenial to the spirit and traditions of the University.

A slight modification of the system, for the meantime at least, has been found necessary. English has been withdrawn from the list of subjects in which students are admitted by certificate from schools; and it seems not unlikely that Regents' diplomas will in the near future be accepted with the same reservation. Whether the system needs further restriction is a question that must constantly be kept in view. The extension of the elective system in the Academic Department, which goes into effect in 1897, has been occasionally mentioned as a reason for holding examinations at least in the advanced entrance requirements. But in connection with this suggestion it is to be noted, first, that the change referred to will affect only about one third of the undergraduates in the University; and, secondly, that, though students in the Academic Depart-

TABLE SHOWING THE NUMBER AND PERCENTAGE OF THE STUDENTS ENTERING CORNELL IN 1895-96 WHO CAME FROM PUBLIC AND PRIVATE SCHOOLS,[1] ALSO THE NUMBER AND PERCENTAGE WHO ENTERED BY EACH OF THE VARIOUS METHODS

ENTERING FROM SCHOOLS	From Public Schools	From Private Schools	Per cent from Public Schools	Per cent from Private Schools	METHOD OF ENTRANCE—NUMBER						METHOD OF ENTRANCE—PERCENTAGE					
					On Regents' Diploma	On School Certificate	By Examination	On College Certificate[2]	On Recommendation as Specials	Students entering the Law School, excepting those from colleges	On Regents' Diploma	On School Certificate	By Examination	On College Certificate	On Recommendation as Specials	Students entering the Law School, excepting those from colleges
In New York State	269	54	83.30	16.70	119	89	18	25	16	56	36.84	27.56	5.57	7.74	4.95	17.34
In U. S. excepting New York	177	42	80.82	19.18	......	73	9	91	20	26	......	33.33	4.11	41.56	9.13	11.87
Outside the U.S.	6	......	100.00	......	......	2	1	1	1	1	......	33.33	16.67	16.67	16.67	16.67
Total..........	452	96	82.48	17.52	119	164	28	117	37	83	21.72	29.93	5.11	21.35	6.75	15.14

[1] The distinction between public and private schools is necessarily roughly drawn. Colleges are all classed as public, though in many cases they are quasi-private.

[2] All students whether Special or Law are included if they come from a college.

ment will not after 1897 be compelled to continue after admission the subjects which they offered for admission, they are as a matter of fact pretty certain to do so, and, consequently, the Faculty will have the same opportunity as at present of actually testing their attainments. The entire question, however, will stand fresh ventilation. And the Dean in his report (Appendix II.) refers to the publications in which he has at various times discussed the advantages and disadvantages of the system. Very significant is his suggestion that the system be extended to embrace a class of private schools which have hitherto been excluded from its benefits.

The table on the preceding page has been here inserted to show the relative numbers of those entering upon certificates and those entering in other ways. But it will also be found to contain detailed information as to the scholastic source of students entering, and the way they gain access to, the University. For instance, the character of the student body of Cornell University is at least indicated in the percentages of students from public and private schools, these percentages varying as will be seen but slightly with the section from which students come. Thus 83.30 per cent of students entering Cornell from schools in New York State enter from the public schools, and of those coming from schools outside New York State 80.82 per cent are credited to the same source. That is to say more than four fifths of all students entering Cornell University, come from public schools. It should further be pointed out that entrance on Regents' diploma being limited to students from this state, the percentages for the other ways of entrance are correspondingly lower for New York State students than for those from other sources.

In view of the general elevation of the standards for admission to the University, and of the extension of the elective principle from the junior and sophomore into the freshman class in the General Courses, as well as for other and more general reasons, it has seemed desirable to tabulate the age of freshmen at entrance. The following tabulation presents a classification by course and sex. As freshmen are also reckoned new students who entered advanced classes, but their age is set down at what it would have been had they at the correspondingly earlier date entered the freshman class at Cornell University :

AGE OF FRESHMEN AT ENTRANCE, CLASSIFIED BY COURSE AND SEX, 1895–96

		16–17	17–18	18–19	19–20	20–21	21–22	22–23	23–24	24–25	25–26	26–27	27–28	28–29	29–30	30–31	31–32	33+	Average Age		Number Admitted
																			Yrs.	Mos.	
General Courses—(Arts,	M.*	4	23	33	33	15	8	2	1	1	---	---	---	1	---	---	---	---	19	3 4/5	121
Phil., Sci., Letters)	W.†	---	13	6	10	10	1	2	2	---	2	2	1	---	---	---	1	1	20	4	51
Agriculture		---	---	2	---	2	1	2	---	---	1	---	---	---	1	---	---	---	22	0 1/2	9
Architecture		---	1	2	7	2	---	---	1	---	---	1	---	---	---	---	---	---	20	0 3/4	14
Civil Engineering		1	5	11	10	13	2	1	---	---	1	---	---	---	---	---	---	---	19	6 3/4	44
Mechanical Engineering		2	6	10	23	10	8	6	1	---	---	---	---	---	---	---	---	---	20	0 1/8	66
Electrical Engineering		---	8	20	10	15	7	5	2	---	---	2	---	---	---	---	---	---	19	10 3/5	69
Medical Preparatory		---	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	17	11	1
Optional	M.	1	2	5	3	2	2	1	---	1	---	---	---	---	---	---	---	---	19	6 3/4	17
	W.	1	1	1	3	1	---	1	---	---	---	---	---	---	---	---	1	1	22	1	10
Special	M.	---	---	1	---	5	3	1	4	1	1	2	1	1	3	1	---	2	24	11 2/3	26
	W.	---	---	---	1	1	---	1	3	2	4	3	1	1	1	1	---	2	27	6 1 4	21
Law	M.	1	---	3	21	21	14	17	7	6	3	4	1	---	---	---	---	---	21	6 3/4	98
	W.	---	---	---	---	---	---	1	---	---	---	---	---	---	---	---	---	---	22	0	1
Total		10	60	94	121	97	46	40	21	11	12	14	4	3	5	2	2	6	20	8 2/5	548

*M=Men. †W=Women.

The average age of freshmen entering Cornell University is, according to this exhibit, 20⅔ years. This average is raised by the greater age of law students and especially of special students. But even with the abstraction of these factors the resulting average age is still high. Looking at the several courses individually, it appears that young men begin the study of Architecture and of Mechanical and Electrical Engineering at 20 years of age, of Civil Engineering at 19½, and of Law at 21½ ; while young men enter the Academic Department at 19⅓ years of age, and young women at 20⅓. It will be interesting to observe what effects will be produced on the age of students by the raising of the entrance requirements. Meantime two reflections are obvious : First, the students in the Academic Department are old enough to know what they want at the University. Secondly, in all courses the age at which students enter is too high. The policy of the University, in so far as the University has any influence in the determination of the matter, should be to get students to enter at an earlier age ; and, in the case of those who enter professional courses, to induce them to devote some time to those liberal arts and sciences which, while yielding a generous culture, may also be the theoretical foundations of their future professions. For example, what a gain it would be to the legal profession, and to the light and learning of the country as well, if students before entering on the study of law spent at least a year or two in the Academic Department, in the study of such subjects as history, economics, political science, and English literature !

The students who come to Cornell University form a zealous, diligent, and well-behaved community. It is universally recognized that this is an institution for serious work. Anything that menaces even in the slightest degree the strenuous tone and practice of the community is to be deprecated and, if possible, averted. Fortunately the conduct of the student body during the year has been above reproach ; and the President cannot express in too strong terms his appreciation of the exemplary manner in which the students have kept unsullied the name and fame of the University. Fortunately too, athletics, in which the year's record is a blending of local defeats with victories of a national character, have brought to the players and their friends nothing but commendations for their sportsmanship and honorable conduct. But the Dean points out a danger—happily remediable—from an unexpected quarter. This is the relaxation of work by certain seniors who complete the required number of hours before the close of the senior year. In some cases they remain in the University, in others they take a leave of absence for one or even two terms. If, as may be presumed, a fair proportion of those persons have anticipated their hours, by summer study and otherwise, in order to enter earlier upon the work of life, they are subjects less deserving of censure than commiseration for the hard necessity which reduces to the lowest limit the period of their collegiate training. Something too may be conceded to seniors in general, who are soon to leave the academic scenes in which they have spent the four most important and impressionable years of life. But beyond these exceptional cases there seem to be others who show "haste in work and a desire to satisfy merely the pass marks, while the latter terms of the course are lost at a time when the increased maturity of the candidates would permit them to secure the greatest profit from taking continuous work." This is certainly a deviation from the Cornell type of student, and, unless it be a transient aberration, it should receive careful investigation at the hands of the Faculties, with a view to discovering the causes of its development and the most effective means of its extermination.

IMPORTANT CHANGES IN ENTRANCE REQUIREMENTS

There has been much complaint on the part of the secondary schools—and the complaint has in general been well founded—of the heterogeneous requirements for admission to the colleges and universities. On the invitation of President Low a conference was during the winter brought together at Columbia University for the purpose of assimilating the entrance requirements in Greek, Latin, French, German, History, and Mathematics in the Academic Departments of the institutions represented. The conference was composed of delegates from Columbia, Cornell, Harvard, Pennsylvania, Princeton, and Yale Universities, and of schoolmen from different sections of the Eastern and Middle States. The representatives of Cornell were Professors Bristol, Bennett, Crane, White,

M. C. Tyler, and Wait. In the case of some of the sections into which the conference naturally resolved itself, more than one meeting was necessary ; and though the classics are the oldest subjects in the list the greatest difficulty in reaching an acceptable programme was experienced by the Latin section. But in the end uniform requirements were agreed upon by all the sections. It is interesting to note that, with only slight deviations in History and Mathematics, the uniform standards adopted are the same as the present requirements for admission at Cornell ; and they were forthwith adopted by the General Faculty, to go into effect in 1897, except the requirement in History, which is not to go into effect till 1898. It is a genuine service to higher education to have made uniform avenues leading from the schools to the colleges and the universities. And President Low merits the gratitude of all educators for initiating a co-operative movement which has led to such happy results.

Two momentous pieces of educational legislation have marked the year 1895–96 at Cornell University. One of them will be fully discussed in the next section. The other, though affecting different courses and enacted by different Faculties, is here treated as one subject : it concerns the raising of the standards for admission. Previous Reports have described the equalization of the entrance requirements to all courses (A.B., Ph.B., B.S.,) in the Academic Department and the addition of Advanced Algebra and Plane and Spherical Trigonometry to the requirements for admission to the courses in Architecture and Mechanical and Electrical Engineering. These norms have now been applied to the rest of the University. In and after 1898, the entrance requirements to the course in Law are to be those of the General Courses in the Academic Department, the entrance requirements to the course in Civil Engineering will be increased by the addition of Algebra and Plane and Spherical Trigonometry, so that they will be the same as those to the courses in Architecture and Mechanical and Electrical Engineering, and, finally, the entrance requirements to the course in Agriculture are to be those admitting to the B.S. course in 1897.

These changes are truly momentous. They are certain to affect for some years the attendance at the University. But the Faculties did not hesitate to sacrifice numerical magnitude to qualitative excellence. It would be a mistake, however, to suppose that they acted with rashness or precipitancy. They believed that, in view of the great and rapid improvement which the public schools of the state and country are making, it would now be safe to put their educational ideal into practice. They enacted therefore that in and after 1898 (special students apart) no person should enter any course in Cornell University whose preparatory education was not equivalent to that indicated by graduation at a high school. The course in the State Veterinary College conforms to this standard also. Doubtless alumni and old students will be struck both with the amount and the extent of the advance in the requirements for admission to the University. They would however greatly err if they argued therefrom that their *alma mater* had grown less jealous of her prerogative or less strenuous in her obligation to keep in closest touch with the masses of the people. The reason why it is now possible to raise the standards for admission to Cornell is that the schools of the people have so greatly improved that they can now undertake a good deal of the work which formerly the University was obliged to assume.

IMPORTANT CHANGES IN THE GENERAL COURSES

The Report for 1893–94 discussed in detail (pp. 30–43) the significant legislation enacted by the Faculty in March, 1894, in regard to the General Courses. The movement then formally initiated, though really of much older date, attained in 1895–96 its culminating development. It will be recalled that in 1894 the Faculty, having abolished the B.L. degree, equalized in difficulty and term of preparation the entrance requirements to the A.B., Ph.B., and B.S. courses, and then differentiated these courses themselves by requiring that the major portion of the elective work of the B.S. course should be devoted to science and the major portion of the elective work of the A.B. and Ph.B. courses to language, literature, history, philosophy, and the humanities in general. The total result of the legislation was as described in the Report for 1893–94: "The substantial equivalency of different sets of entrance requirements, the complete differentiation of corresponding undergraduate courses, and finally, the real equipollency of the A.B., Ph.B., and B.S. degrees themselves."

It will be observed that the B.S. and the A.B. degrees (Ph.B. was an irrational survival which the logic of the situation would have swept away with the B.L.) got their meaning from the specific character of the studies prescribed, which, on the one hand, were prevailingly scientific and on the other prevailingly humanistic. To give those degrees a tenable significance the unlimited freedom of election which had long prevailed in the junior and senior years was weighted with the restriction that the candidate for the B.S. degree must devote the majority of his hours to the sciences of nature and the candidate for the A.B. degree must devote the majority of his hours to literary, historical, and philosophical studies. Logically this distinction was sound, and, if the different degrees were to be maintained, inevitable. But pedagogically it proved, if not a mistake in itself, at any rate a hardship to no inconsiderable number of students. Many candidates for the A.B. degree, after completing the sophomore year, wished to go off into science. And some candidates for the B.S. degree —though naturally a smaller number—desired in the last two years to put the major portion of their time on history, philosophy, and literature. To relieve this situation the Faculty in November, 1895, repealed that portion of the legislation of March, 1894, which restricted the freedom of election of studies in the junior and senior years. But this action immediately gave rise to two new questions : first, should not the elective principle be applied more fully to the sophomore or extended even into the freshman year? And, secondly, what meaning could hereafter be attached to the A.B. and B.S. degrees respectively, seeing that the winner of one would no longer of necessity be a humanistic scholar or the winner of the other a student of the sciences? Neither of these questions, which called loudly for solution, could have been raised prior to 1894, when the entrance requirements to the B.S. course were so much lower than those to the A.B. course. But with these standards equalized, and with the attempted differentiation of undergraduate courses abolished, it lay in the nature of the case that, if the Faculty extended the elective system into the freshman year, even the semblance of a distinction between the different courses would disappear and one degree—the A.B.—would be given to all undergraduates who completed satisfactorily four years of study, irrespective of the subjects they might happen to select.

This is what after continuous deliberation and discussion from November the Faculty voted on May 22nd to do. Their action was determined by three considerations: first, the principle of freedom of election of studies in the General Courses; secondly, the fact of the equalization of all requirements for admission to these courses; and, thirdly, the urgent demand that a degree shall signify something positive and not (as in the case, for example, of the Ph.B.) merely the absence of a subject which may take 18 hours in a course of 180 hours.

No description of the new departure at Cornell would be just, however, which did not point out that the three definite and equalized sets of entrance requirements which have been built up are left intact. The candidate for admission to the A.B. course need not, to be sure, offer either Latin or Greek, but he cannot instead offer any hodge-podge he pleases. He must, in addition to the preliminary subjects, offer either (1) Greek and Latin, or (2) Latin and advanced French or German, or (3) advanced French, advanced German, and advanced Mathematics, including Solid Geometry, Higher Algebra, and Plane and Spherical Trigonometry. In a word, then, the student upon entrance must prove himself well grounded in a systematic high school course, having certain staple subjects, and covering part of the ground of an old-fashioned college course. Then, when he is admitted he may take what he chooses, provided only he completes satisfactorily the amount prescribed for each term. And at the end of his course he receives the A.B. degree.

If it be said that the action of Cornell University destroys the conception of liberal culture, the reply is that far from destroying the conception, it enlarges and revivifies it and brings it into living relation with all the intellectual and æsthetic elements of our modern complex civilization.

It is folly to suppose that some parts of human knowledge are liberalizing, and others neutral or negative; or that some institutions yield culture, and others merely science. The real difference is in the nature of the outlook which the several studies yield. One reveals the constitution and order of Nature, the procession of the heavenly bodies, the elements of the earth, the mechanism and functions of living beings. The students of this objective sphere are the scientists *par excellence*. The other study tells of Man, of his doings and sufferings, of the arts he has invented, and the institutions he has established, of the whole form and content of human history in its largest sense. The votaries of this study are the humanists. The humanities and the sciences together exhaust (theology apart) the materials of knowledge. Our extensive ideal of the educated man is the scholar who reaches out for them all ; our intensive ideal is the specialist who has mastered one. Both ideals have their value ; neither excludes the other. In practice we strike a compromise. We do not want a scientist who is altogether ignorant of the humanities, or a humanist who is altogether ignorant of the sciences. That one science is as educative as another all the colleges agree. And in the twentieth century it will also be recognized that English and German literature, history and politics, metaphysics and ethics are as truly liberalizing and educative for the minds of young men and women as the ancient classical humanities, though there can be no reasonable doubt that Greece and Rome and Jerusalem, as the fountain heads of human civilization, will always hold a place of honor and be an object of homage in every institution of learning which nourishes the liberal arts and sciences or cares for those ideal goods of truth, beauty, justice, and righteousness wherein consists the true glory of human life on earth.

The legislation just described has been in general well received by the public. But certain exponents of the traditional curriculum have loudly criticized the change as derogatory to the classics, which they consider, or profess to consider, essential constituents of a liberal education. Now it is the policy of Cornell University to maintain and increase the dignity and efficiency of the departments of Greek and Latin ; so far as liberal appropriations can secure the ablest and best trained professors and the richest equipment liberal appropriations will continue to be made. It is the determination of the Board to have the work of instruction and research done by the classical departments of Cornell University second to none in America. But the Faculty are of the opinion—and the recent vote was a fresh declaration of their view—that a generous education, a liberal culture, may be obtained from the study of modern literatures, history, economics, politics, philosophy, psychology, and the sciences of nature as well as from the study of Latin and Greek. The President showed in the Report for 1893-94 (pp. 38–41) by tabulating the results of inquiries made of forty representative colleges and universities, how the traditional classical requirements had been gradually and unconsciously attenuated: almost all these institutions having greatly reduced the amount prescribed, some (like Williams and Vassar) having thrown out Greek, and others (like Harvard and Johns Hopkins) demanding neither Greek nor Latin after matriculation. That the action now taken by the Faculty merely anticipates the drift of progressive educational sentiment—that in this as in some other things Cornell after serving as an object of blatant censure will become a model for silent imitation—is strikingly suggested and indeed probably demonstrated by two subsequent occurrences, one of them in the United States and the other in Germany.

At the meeting of the National Educational Association at Buffalo in July—scarce two months after the action of the Cornell Faculty on the A.B. degree—the committee appointed at the Denver meeting in 1895 on College Entrance Requirements presented a semi-official preliminary report. The committee is composed of college professors and school principals and superintendents (Cornell University not being represented). They know the problem, not only from the standpoint of the colleges, but from the standpoint of the high schools and of the great public who support them. The document they submitted to the departments of secondary and higher education at the Buffalo meeting opens with an instructive tabulation of the entrance requirements of a long list of American colleges and universities, selected to cover all sections of the country and to include all types, after which comes the report of the chairman. This report, which was unanimously adopted by the representative experts of the National Educational Association assembled in Buffalo, contains the following passages:

> "Every young man or woman who has successfully devoted at least four years to earnest study in a well-equipped secondary school, should be admitted to any college in the country, whether such a pupil has devoted the greater part of his time to Latin, Greek, and mathematics, or to Latin, modern languages, and mathematics, or to Latin, mathematics, and the sciences, or to any other combination of studies which has developed his power and been in harmony with his intellectual aptitudes."
>
> "There is no identity of form, either in mind or matter, in the natural or the spiritual, and since power, power to adapt one's self to the sphere for which nature designed him. is the end of education, every student should find in the college and university, the means by which that power may be secured. If this principle is correct,—and who shall prove its fallacy?—why is not the degree of B.S. or Ph.B. of equal dignity and worth with that of A.B.? Or, in other words, why should not all such degrees be abolished or moulded into one which shall signify that a man or woman has secured that higher education best suited to his talents and the far-reaching purposes of his life?"

Precisely the thing demanded by this report in the interest of secondary and higher education is what Cornell University had a few weeks before decided to do!

The second confirmatory evidence of the wisdom of the new policy comes from the undisputed home of classical scholarship. For some time there has been a broad and powerful undercurrent of thought in Germany in favor of putting modern subjects on an equality with the classics in the gymnasia (which correspond to the American colleges). But even Germans have been surprised at the universal attention, the sympathetic and judicious treatment, which such an iconoclastic book as Professor Arnold Ohlert's "Die Deutsche Höhere Schule" has received from the competent spokesmen of the nation. Professor Ohlert, himself a school principal, proposes fundamental changes in the time-honored curriculum of the gymnasium. He advocates the abolition of Greek as a general requirement; with retention of it for special needs, and the reduction of the amount of Latin to less than one half of that now prescribed; and he proposes to increase by more than one hundred per cent the time now devoted to each of German the natural sciences, and drawing, and by about thirty per cent the time now devoted to each of French and history (with geography), while he would make English for the first time a required study in the course. Professor Ohlert claims that the tendency of the established curriculum is to "unfit the boy for the tasks devolving on the man." His scheme of reform, which has been received in a way that seems to betoken a change of conviction in educated circles, is based on two principles which influenced the Cornell Faculty in remodeling the A.B. course: first, the adaptation of studies to the *needs* of students, and, secondly, the recognition of the natural sciences and of modern languages and literatures and other liberal arts on equal terms with the ancient classical languages as fitted to yield discipline, culture, and education to the minds of students.

It has been shown elsewhere (p. 18) that for some years past the Ph.B. course has steadily grown in attractiveness. It is also a fact that most high schools can satisfy the entrance requirements in Latin, while very few of them will be able to meet the now enhanced demands in both French and German. Hence as an immediate result of the changes described the University is likely to have in the Academic Department a larger number of matriculants who offer Latin and Greek, or Latin and French, or Latin and German, and a smaller number who offer French and German than ever before.

THE REORGANIZATION OF THE FACULTIES

The educational administration of Cornell University up to 1886–87 was in the hands of a single Faculty. When the School of Law was established in 1887 the professors of law were constituted into a separate Faculty with jurisdiction over the students of the School. And since that date the General Faculty and the Law Faculty have, as independent and autonomous bodies, discharged the educational functions of the University. Some correlation however was absolutely necessary; as students in the School of Law often elected courses in other departments of the University and the number of students in the other departments of the University who elected work in the School of Law has risen for the last five years from 29 in 1891–92 to 48 in 1895–96.

These cases called for joint action on the part of the Faculties, and, there being no statutory provision for the common consideration of policy, they were simply referred as they arose to a Committee of Conference. Again, as nearly all the intercourse with the School of Law is through the Academic Department, it would not be a matter of primary concern to professors in other divisions of the University. But this diversity of interest was equally manifest within the General Faculty itself. According as a matter affecting the General Courses or the Technical Courses was under consideration one body of men or another was concerned, never both—at any rate in anything like the same degree. Nor was this all. The line of cleavage was as clear between each of the Technical Courses and the rest as between the General Courses and all. If the course in Law, which had connections with the rest of the University, was under the charge of an independent Faculty, it seemed natural to inquire why the courses in Engineering, Architecture, or Liberal Arts, should not enjoy the same advantage, even though they were tied to the rest of the University by somewhat more points of attachment than happened to be the case with the course in Law. And, then, what of the future? Should new departments be merged in the General Faculty or erected into autonomous bodies like the School of Law? Indeed this question had a particular and pressing application to the State Veterinary College. Was that institution to be organized like the School of Law with a separate Faculty or was its staff to be merged, like that of Sibley College, in the General Faculty?

The constitution of the Faculties of the University embodied two principles, which are not only sound, but vital to every healthy organization. Unity and variety, combination and distribution, integration and differentiation are the laws of all living institutions. The General Faculty is an example of unification, the Law Faculty of differentiation. But in the General Faculty variety and relative independence of function have been sacrificed to unity; and in the Law Faculty differentiation has been secured by severance from the organic whole. The problem then is not more obvious than its solution. As end a complete co-ordination and diffentiation of the educational forces of the University; for means a redistribution of the existing functions of the Faculties with the minimum of disturbance compatible with that operation.

If the Faculty of Law be taken as a model of specialization, it becomes apparent that, aside from the Graduate Department, a Special Faculty will be needed for every separate set of students in the University, that is, for every course leading to a distinctive degree. The *fundamentum divisionis* would yield a new Faculty for each of the following divisions of the University: the Academic Department, the College of Civil Engineering, the Sibley College of Mechanical Engineering and Mechanic Arts, the College of Agriculture, the College of Architecture, and the New York State Veterinary College. Into these special Faculties therefore, with functions similar to those now exercised by the Faculty of Law, the General Faculty would be resolved. But the educational power of the University is not a mere congeries of separate Faculties. The unity which the General Faculty has hitherto symbolized must be embodied in a University Faculty which shall integrate the educational forces of the University and embrace not only the professors of the new Faculties into which the General Faculty has been dissolved, but also the professors of the Faculties of Law and Veterinary Medicine, and of every other Faculty which may hereafter be added to the University. As every Faculty has supervision of a body of students, the University Faculty will appropriately take charge of Graduate Students; and its further function will be the consideration of questions of general policy.

In conformity with these considerations the Trustees in the latter part of the year, after committee conferences with the existing Faculties, enacted the following statute, to go into effect on the day following Commencement:

"STATUTE FOR THE REORGANIZATION OF THE FACULTIES OF CORNELL UNIVERSITY

1. THE UNIVERSITY.—Cornell University comprehends the following departments, to-wit: the Graduate Department, the Academic Department (or Department of Arts and Sciences), the College of Law, the College of Civil Engineering, the Sibley College of Mechanical Engineering and Mechanic Arts, the College of Architecture, and the College of Agriculture. The New York State Veterinary College is administered by Cornell University, and its work is organically connected with that of the University.

2. THE FACULTIES.—The Faculties of Cornell University are: (a) A General Faculty, designated The University Faculty; and (b) Special Faculties as follows: the Faculty of Arts and Sciences, the Faculty of Law, the Faculty of Civil Engineering, the Faculty of Mechanical

Engineering, the Faculty of Architecture, the Faculty of Agriculture, and the Faculty of Veterinary Medicine.

3. THE UNIVERSITY FACULTY.—The University Faculty consists of the President, who is *ex officio* the presiding officer, and the Professors and Assistant Professors of the University, including the Professors and Assistant Professors of the New York State Veterinary College. It is the function of the University Faculty to consider questions which concern more than one Special Faculty, and questions of University policy. The Graduate Department is under the immediate charge of the University Faculty.

4. THE SPECIAL FACULTIES.—Each Special Faculty is composed of the President, who is *ex officio* the presiding officer, and all Professors, Assistant Professors, and Instructors who teach in the department or departments under the charge of that Faculty; but Instructors shall not have the right to vote. Subject to the right of revision by the University Faculty, on all matters affecting general University policy, it is the duty of each Special Faculty to determine the entrance requirements for its own students; to prescribe and define courses of study for them; to determine the requirements for such degrees as are offered to students under its jurisdiction; to enact and enforce rules for the guidance and government of its students; and to recommend to the Trustees such candidates for degrees as may have completed the requirements.

5. DIRECTORS AND DEANS.—Every College has a Director and every Faculty has a Dean. The powers and functions of Directors are fixed at the time of their appointment. Directors are also Deans of their respective Faculties. The Dean of the University Faculty and the Dean of the Faculty of Arts and Sciences are each appointed by the Board of Trustees on the nomination of the President and with the concurrence of his Faculty. It is the function of the Dean to preside at the meetings of his Faculty in the absence of the President; to receive and act upon such applications of students as may be referred to him by his Faculty; to prepare and conduct the business of the several committees of which he may be made by his Faculty the chairman; and, in general, except as otherwise provided, to act as the executive officer of his Faculty."

The professors of law will be members of the University Faculty, but otherwise their official functions will be little changed. There is, however, a change in the name of that department of the University to which they belong: the School of Law has received the official designation of the College of Law. This nomenclature is in harmony with the general practice of the University: all other divisions in which men are definitely prepared for the learned professions being designated Colleges.

There is a justification of this usage in certain features which the Professional Colleges possess in common with the old-fashioned Classical College. Of course the subjects of the curriculum are widely different ; but, like its prototype, the Professional College lays down a prescribed programme of studies and it is attended by a homogeneous body of students. But at Cornell University pre-eminently, there is another good reason for this designation. The Faculties have so raised the requirements for admission to the Professional Colleges that they now pre-suppose the training of a full high school or academy course, which has always been the norm for matriculation into the Classical College. The College of Civil Engineering has just taken its place with the Colleges of Architecture and Mechanical and Electrical Engineering on this higher plane ; and the A.B. entrance requirements were at the same time bodily adopted for admission to the College of Law—an advance of some two years of preparatory study upon the present demands. Alike in the amount of their preparatory requirements, alike in the fixity of their curriculum, alike in the homogeneity of the culture they impart, the Classical College and the Professional College have one more characteristic in common. As in its original usage the A.B. degree stamped the graduate as an expert in certain definite subjects called the liberal arts, so the course in each of the Professional Colleges leads to a specific degree, which, whether it be LL.B., or M.E., D.V.M., or C.E., is a certificate that the possessor has mastered the learning or science on which the practice of his profession is based.

The General Faculty is dissolved. Its members and functions are distributed among the newly created Faculties. Its legislation will remain in force until modified by special enactment on the part of the new Faculties. Thanks to the painstaking labors of the Dean, that legislation is now accessible in his codification and index of the proceedings of the General Faculty from 1868 to 1890, and in the selection of extracts from the minutes which, since 1890, he has regularly printed and at the end of the present academic year brought to a close with an index. In recording the passing of the General Faculty the President feels that it would be ungracious if mention were omitted of the valuable services which during the past eight years have been discharged by the Dean, Professor H. S. White. His unwearied industry, inexhaustible patience, and wide knowledge of precedents, combined with his readiness to co-operate with others and his strong sense of parliamentary propriety, made him an adept in dealing with the mass of business which came before the Faculty and before the several Faculty committees of which he was *ex-officio* chairman, while his straightforwardness, firmness, and high sense of justice and fair play commanded the respect and affection of the students, to whom he was always a most acceptable exponent of the will of the Faculty. On his daily work in the Dean's office perhaps the best compliment is to state the fact that not only was it well done but so thoroughly ordered and organized on principles and precedents that much of it may now be conducted through the channels of the Registrar's office. Professor White was, on the nomination of the President and with the unanimous concurrence of his colleagues, appointed by the Trustees as first Dean of the University Faculty. In this capacity his special care will be the fostering of the Graduate Department and the administration of the general educational policy of the University Faculty.

THE GRADUATE DEPARTMENT

During the past nine years Cornell University has received into its Graduate Department 712 graduates of 139 institutions. The enrollment for 1895–96 was 145. Of those 58 were candidates for the Ph.D. degree, 22 for the D.Sc. degree, 51 for a Master's degree, and 14 were not candidates for any degree. The effect upon the attendance in the Graduate Department of charging fees for tuition has been already described. But there is one class of cases to which special attention is invited. For some years past, persons not resident at the University have been permitted to become candidates for the Master's degree in Mechanical Engineering, Civil Engineering, and Agriculture after two years of practice and study in their professions. As no charge was made for their instruction, or rather for the guidance of their studies by correspondence, these non-resident graduate students greatly increased in numbers. It was announced however in 1894, when other graduate students first paid tuition fees, that the non-residents would not be exempted after that year; and at the first meeting of the Board in 1895–96 it was voted that hereafter graduate students studying for a degree *in absentia* be charged one year's tuition, payable in advance. The effect of this action is very noticeable in the enrollment. In 1894–95 there were 16 non-resident candidates for the M.C.E. degree, and 38 for the M.M.E.; in 1895–96 these numbers fell to 8 and 20 respectively,—a decline of 50 per cent!

Nor was this the end of the matter. A good many members of the Faculty, to whose attention the subject of non-resident graduates was this year brought with unusual force, seemed not to have realized that the University had fallen into the practice of granting advanced degrees in at least three courses for professional study and practice outside. A strong opposition to the policy was developed. As Cornell degrees have always connoted satisfactory study at the University, it was felt that their character might be undermined by this practice, which it was impossible logically to restrict to certain courses and which might even prepare the way for such a departure as honorary degrees. On the other hand something was to be said on behalf of an existing arrangement and not a little as to the benefit accruing to the non-residents themselves. A compromise was finally struck as follows:

> *Resolved*, That residence at the University be required for all degrees, except that in special cases graduates of this University, on the recommendation of the special committee who would have charge of their work, may by vote of the Faculty in each case become candidates for the degrees of M.C.E., M.M.E., and M.S. in Agriculture after two years of professional practice and study *in absentia*.

This resolution restricts the class of non-residents who may become candidates for an advanced degree to graduates of Cornell University, and, furthermore, the privilege, instead of being general and unconditional, must be obtained through special action of the Faculty in each individual case. When it is also borne in mind that the candidate must pay one year's tuition fees, it will be seen that the University, though not formally abandoning the policy, has encompassed it with restrictions which will probably lead to its disuse.

The advanced degrees conferred during the past five years are indicated in the following table:

ADVANCED DEGREES GRANTED 1892–1896

	1892	1893	1894	1895	1896	Total
A.M.	6	4	8	2	1	21
Ph.M.	2	--	3	1	3	9
M.L.	1	3	2	3	--	9
M.S.	7	6	10	7	12	42
M.C.E.	--	2	8	4	--	14
M.M.E.	6	14	16	8	15	59
Ph.D.	8	4	16	13	14	55
D.Sc.	--	2	3	6	3	14
Total	30	35	66	44	48	223

The subject which attracted in 1895–96 the largest number of graduate students was Philosophy, 20 taking it as their major study, and 37 taking it as one of their minors. Not far behind came History and Political Science, in which 16 students make a major and 28 a minor. Further details will be found in the table in the Dean's Report (Appendix II, p. XV.). In this connection the President would point out that the most largely frequented departments are those in which fellowships and graduate scholarships have been most liberally provided. The Sage School of Philosophy, thanks to the munificence of Hon. Henry W. Sage, the Chairman of the Board, has three fellowships and six graduate scholarships at its disposal, and the stipulations of ex-President White, on giving his library to the University, have secured for the White School of History and Political Science a goodly number of similar aids. But the Departments of Greek and Latin, of French and German and English, of Mathematics and Physics, of Chemistry and Biology—the departments which prepare teachers for the higher schools—are all greatly in need of endowments to assist able graduates who desire to prosecute their studies beyond the undergraduate range. A gift of $10,000 will establish a fellowship, and one of $6,000 a graduate scholarship. Fifty such gifts would barely suffice to meet the urgent demands made upon the University.

The instructing staff of the Graduate Department is, with the exception of the officers of lower grade, the same as that for the rest of the University. Their work is exhibited in Appendix V. The conditions of their several departments will be briefly noticed in the sections which follow.

THE ACADEMIC DEPARTMENT

Under the statute hereinbefore cited that division of the University which embraces what has hitherto been known as the General Courses is designated the Academic Department, and its educational interests are entrusted to a Faculty designated the Faculty of Arts and Sciences. This Faculty is composed of the professors, assistant professors, and instructors in Greek, Latin, French, German, English, Philosophy, Psychology, Pedagogy, History, Political Science, Mathematics, Physics, Chemistry, Botany, Physiology, Anatomy, Zoology, Geology, Mineralogy, Palæontology, Hygiene, and Military Science. At a meeting held on the day following Commencement the President nominated Professor T. F. Crane as Dean, and, the Faculty unanimously concurring, the appointment was subsequently made by the Trustees. The Faculty as thus organized, having made provision for the conduct of its business during the summer, adjourned to enter upon its regular work at the opening of the academic year 1896–97.

The Academic Department is vitally connected with every other division of the University. The Graduate Department is a higher potency of it—the fullest development under the most favorable conditions. The nursing mother of all knowledge in its ideal state, the Academic Department is charged with the cultivation of all the liberal arts and all the pure sciences. It is the central energy which vivifies and illumines all the other bodies belonging to the system. If the pure sciences be not cultivated, schools of applied science are a farce. There can be no applied science till you have a science to apply. But not only is the Academic Department the foundation of the Professional Colleges ; it is also through the Academic Department that the minds of youth receive the most generous culture and the knowledge of mankind is amplified and enlarged. At Cornell University, whose Professional Colleges have a national and even an international reputation, the Academic Department should always be an object of watchful solicitude and liberal support. It is now much in need of new professorships of Astronomy, Economics, Finance, Music, Biology, and Chemistry, and of bursaries and scholarships for the benefit of indigent and deserving students, of whom Cornell University has always had a large number. The material equipment of the existing departments has in many cases become altogether inadequate. The laboratories in the Departments of Geology and Zoology are far behind the present day demands of those sciences ; the Department of Botany is still without any accommodation in the University excepting the rooms it occupies in the College Mr. Sage erected as a home for the women of the University ; and the Departments of Ancient and Modern Languages, Mathematics, and History are compelled to use class-rooms which are too small for the size of the classes, which are are badly ventilated, and which are often occupied without a break for five hours in succession. In such circumstances it is not easy to distinguish the relative urgency of the several needs. But the President is of the opinion that the erection of a Hall of Languages, a Hall of Biology, and a Hall of Mathematics—and in that order—cannot be long deferred without maiming the present work of the University and greatly impairing its prospects for the future. A number of professors make urgent pleas for better housing of the literary departments. One of them declares that "few high schools but are better cared for as regards class-rooms and offices, pure air, light, and various sanitary arrangements, than are a large proportion of the students and teachers of Cornell University." A gift for a Hall of Languages would be a most effective aid at the present time. For the erection of such a Hall, while it would furnish the Departments of Ancient and Modern Languages with facilities for instruction of which they now stand greatly in need (among which small rooms for conferences with students individually would not be the least important) would also be a visible demonstration, which all the schools in the State would understand, that, though the study of the Ancient and Modern Languages is now elective at Cornell, it is the policy of the University to invest them with all the power, dignity, and attractiveness which can be supplied by the ablest and best trained professors working with the amplest and best equipment. This is a unique opportunity for some good friend of the University who is interested in the development of liberal, and especially literary and classical culture at Cornell. The desire of the Faculty of Arts and Sciences to see the Classical Departments at Cornell maintained at the highest possible efficiency would lead every member to rejoice at a gift for their support, even though painfully conscious of the still unsatisfied and urgent needs of his own particular department.

Professor Wheeler spent the year 1895–96 in the American School of Classical Studies. In his absence Mr. Louis Dyer of Oxford University acted as Professor of Greek. His work has been characterized elsewhere (p. 9). Associate Professor Emerson, besides his work in Archæology, conducted a course in Greek Lyric Poetry and gave some instruction in Modern Greek. The experiment of a course in New Testament Greek by Dr. A. C. White has been in every way successful. Associate Professor Bristol, who has been the administrative head of the department, reports a noticeable improvement in the character of the preparation of the freshmen. The fellow in Greek, Mr. E. P. Andrews, who spent the year in the American School at Athens, has done honor to himself and credit to the University. He reconstructed an inscription on the Parthenon from the nail-holes in which the letters were once supported, thus accomplishing a feat which archæologists had supposed impossible. It is a good illustration of the value of the School at Athens for the training of American Hellenists. And the contributions annually made by Cornell University to its support have this year been abundantly repaid.

Professor Bennett reports an increase in the attendance on the elective courses in Latin. Two new features have characterized the work of the year: first, the establishment of a new course in Early Latin, Oscan, and Umbrian; and, secondly, the organization, with the co-operation of Professor Dyer, of a series of public translations of Greek and Latin masterpieces, which proved a great success. Professor Bennett published a small Latin Grammar, which has acquired wide popularity in a few months; and the appendix, which forms a large companion volume, is a learned treatise which scholars both at home and abroad have received with high commendations.

Professor White reports that the courses of instruction in German have been given as announced except that there was some redistribution of work in the spring term, in which Professor Hewett took a leave of absence in lieu of his sabbatic year. The seminary library has been increased by three or four hundred volumes in the way of accessions from the duplicates of the Zarncke collection. Professor White again pleads for the establishment of special scholarships and fellowships for the encouragement of graduate work in German and the support of able candidates who desire to qualify themselves for positions as teachers of German in the secondary schools. And by a description of the present condition he makes a very impressive argument for the housing of the humanities, which he asserts is at present in "startling" contrast with the housing of the technical and scientific departments, "which latter almost solely have profited by the improvement in building equipment."

Professor Crane reports certain minor deviations from the schedule of instruction in the Romance Languages owing to Instructor Otto's withdrawal at the end of the second term and to other circumstances. At the end of the year Instructor Segall also withdrew. The vacancies have been filled by the appointment of Mr. E. W. Olmsted, formerly instructor in the department but now studying in Paris, and Mr. A. A. Moore, a graduate of Hamilton College, who has had two years' study at Freiburg, Heidelberg, and Paris.

In the division of English Professor Corson reports a larger attendance than ever before and exceptionally successful work in English Literature. Professor Hart reports that the amount of graduate work in English Philology is unprecedented in the records of the department, and that in Rhetoric his seminary for high school teachers has not only grown in numbrs but improved in quality. The experiment of meeting the freshman class in Elementary Rhetoric once a week, in addition to their regular hours, has brought the Professor into personal relations with the beginners in his department and stimulated their interest in the work. The courses hitherto taken by Assistant Professor O. F. Emerson will be distributed between Professor Hart and Instructor Strunk, and additional appointments have been made to fill the gaps thus created. The arrangement will suffice during the present transition period, but cannot be permanent. There is some overlapping of the courses in Rhetoric and the courses in Oratory, but it is difficult to delimit the respective fields. In Elocution and Oratory Assistant Professor Lee has a continued growth to record in the number of students taking work in Oratory, and in the enthusiasm with which they pursue their study. During the past year the department has given three new courses, a seminary in oral discourse, an elementary and an advanced course in extempore speaking. Two assistants, Messrs. J. R. Lewis and W. H. Edson, have been added to the teaching force for the coming year. In the the third annual contest in debate with the University of Pennsylvania, held in Ithaca in February last, the victory was for the first time won by the Cornell speakers.

The reinforcement of the staff of the Sage School of Philosophy has been already described (pp. 10–11). Professor Seth comes into the School as Sage Professor of Moral Philosophy. The President is relieved of the function of instructing classes owing to the impossibility of meeting them regularly ; but in other ways, less officially and on special occasions, he expects to be a public teacher at the University and he would be loath to surrender his part in helping to educate and form the mind and character of Cornell students. It has been stated elsewhere that the number of graduate students taking work last year in the Sage School of Philosophy was larger than in any other department of the University. Professor Creighton alone had twelve candidates for the Doctor's degree taking a major in Logic and Metaphysics. He also reports that the number of undergraduates who elect metaphysical studies, though not yet large, is increasing and that as a rule they are exceptionally strong students. Professor Titchener reports that he has established a new course in Psychology suitable to the needs of undergraduates, and the results have been such as to warrant its continuance as a permanent feature in the annual programme. At the same time his work with graduates has been heavier than in any previous year. The new laboratory, spacious as it seemed a year ago, has already proved inadequate, and additional rooms are now solicited for the pursuance of special advanced investigation with protection against interruptions from other workers. Professor C. M. Tyler reports that in the History and Philosophy of Religion his classes, though not large, have manifested a most gratifying interest in their work. In Pedagogy the work has gone on as usual, and Professor Williams is able to announce that the State Superintendent of Public instruction has adopted his suggestion and given State recognition to college instruction in Pedagogy.

In the President White School of History and Political Science the courses in History which have attracted the largest number of students have been those of Professor Moses Coit Tyler and Professor Morse Stephens. This drift to American and English History has been, Professor Burr states, at some slight cost to the study of the remoter periods and more distant lands. Professor Tyler has long been anxious to have the University make provision for the special study of the History of New York, and his report contains some weighty remarks on securing a complete collection of historical materials for the investigation of its history. There may be some patriotic citizen who would be glad to establish, at this intellectual centre, a professorship of New York History and a library and museum for the collection and preservation of documents and materials bearing upon it. Professor Jenks announces some important changes in the Department of Political Science, among which the most considerable are his own assumption of the elementary class in Political Economy and Assistant Professor Hull's transfer to work in Money, Credit, and Banking. There never was a time when an endowment for a special chair of Finance was more palpably called for than at the present moment. It is to the universities that the people must look for sound and intelligent views upon the subjects of currency, banking, etc. And the present state of public opinion shows that a man of means could not, from an economical, patriotic, or moral point of view, make a better use of capital than to endow instruction and investigation in monetary science. Cornell University needs $80,000 for the establishment of a chair of Finance.

In Mathematics the advanced courses suffered from the loss of Dr. Ritter; but professors and instructors joined cordially together to maintain the work and standing of the department. Professor Wait feels that, while the undergraduate instruction is satisfactory, something is still to be done in elevating the graduate work. The large and increasing classes overflow the present accommodations, which were never satisfactory; and a new Hall of Mathematics would be a very helpful gift.

In Physics the use of the Laboratory Manual prepared by members of the Department of Physics two years ago has led to a great improvement of the instruction in the junior and senior years. Professor Nichols announces the intention of making laboratory work a portion of the first year's course also. Advanced instruction and original investigation continue to play a large part in the work of this department. Since the establishment of the Physical Review in 1894 more than thirty memoirs and contributions dealing with original work have come from the laboratory. And Professor Nichols enumerates twenty-eight positions—most of them professorships—in twenty-five colleges and universities now filled by men who have completed their training in Physics at Cornell University. He renews his plea for a large lecture room and, in common with other professors, he would like to see an increase in the number of fellowships.

In Chemistry, too, Professor Caldwell reports a long list of publications by members of the department. It is also announced that Assistant Professors Trevor and Bancroft intend to publish a journal of Physical Chemistry. As Cornell is the only university in America where this latest development of the science has been cared for, it is appropriate that its organ should be in the hands of Cornell professors. With these subjects for congratulation Professor Caldwell mingles his regrets that the Board of Trustees have postponed the erection of the annex to Morse Hall, which he had designed for Industrial Chemistry.

Owing to the illness of Professor Prentiss and other causes, some changes were made in the courses of instruction in Botany. On the withdrawal of Professor Prentiss, Associate Professor Atkinson (see p. 12) was appointed to succeed him. A re-distribution of work was effected: Professor Atkinson taking Comparative Morphology and Mycology, and Assistant Professor Rowlee taking Comparative Histology and Systematic Botany. At the same time Mr. E. J. Durand was appointed Instructor in Botany, and Mr. K. M. Wiegand was appointed Assistant, thus completing the reorganization of the Botanical Department. Both Professor Atkinson and Assistant Professor Rowlee, besides conducting the regular instruction, have continued their activity as investigators and producers.

The not inconsiderable appropriations they requested for improving their facilities for instruction and investigation were all granted by the Trustees. A building for Botany, or at any rate for Biology, is now the most urgent need of the department.

The productivity of the Department of Entomology and General Invertebrate Zoology continues unabated. Besides guiding the investigations (some of them since published) of a number of students, Professor Comstock has published, in conjunction with Professor Kellogg of Stanford, a laboratory manual on the Elements of Insect Anatomy. His Manual for the Study of Insects, mentioned in last year's Report as then just published, has since been adopted as a text-book at Yale and other colleges and in nearly every Agricultural College in the United States. Professor Comstock is now at work on an elementary handbook—First Lessons in the Study of Insects—designed especially for the use of teachers in the primary and secondary schools. Doubtless it will aid in the solution of the now pressing problem of the introduction, not merely of the sciences, but of good scientific teaching into the schools.

Professor Wilder reports a considerable number of publications by the instructing staff in Physiology and Vertebrate Zoology. The courses of instruction have been given as announced. With the normal additions to the Museum, progress has been made in the rearrangement of its contents. The most urgent needs of the department are appropriations, first, to fill gaps in the Museum as an educational agency, and, secondly, to utilize for instruction and publication that collection of brains of man and other animals brought together by Professor Wilder, which is without doubt the most complete in this country. Professor Gage has removed his work to the State Veterinary College, thus making available for Professor Wilder's work space which he has sorely needed.

In the Department of Geology Assistant Professor Tarr has been promoted to a professorship (see p. 13). His course in Physical Geography was a marked feature of the work of the year. In Mineralogy and Petrography Assistant Professor Gill reports that the amount of instruction during the year was below the average,—this being due partly to changes in the course in Architecture and partly to his insistence on a fuller preparation for the work in Petrography. In Palæontology Assistant Professor Harris has had a small class of students, mostly graduates, and also laboratory work. He has made good progress with the arranging and labeling of specimens in the Museum, which he has also enriched by materials collected in the holidays in the Southern States. He is engaged in a systematic investigation of the lowest Eocene fauna of the country, the results of which have been in part published. Professors Tarr and Gill spent the vacation in Greenland, where they have been collecting geological and other materials for the University. Though it was not a University expedition, Mr. E. G. Wyckoff seized the opportunity of enriching the Cornell collection by a gift of $2,000 to enable the professors to go. His beneficence is greatly appreciated by the department and merits the gratitude of the University.

In Physical Culture and Military Drill the work of the year was performed in the usual way. The Faculty have voted to make these exercises count toward graduation, so that students relieved from them must present an equivalent in hours in other subjects. Professor Hitchcock would like more time for Physical Culture, but it seems impracticable to find it. Professor Bell reports that the military proficiency of the young men is greater than he has ever known it before. The formation of a bicycle company is the most striking new feature of the year's operations, though the completion of a 200-yard rifle range may prove to be not less useful. The interest in both military exercises and athletic sports is on the increase ; but so far as is known none of these forms of physical activity has gone beyond the limits of healthful moderation. The young women of the University have shown their appreciation of the value of out-door exercise by the formation of an association for the cultivation of tennis, bicycling, rowing, and other games and amusements. It is now a hopeful addition to the agencies making for good health and vigorous constitutions in the membership of Cornell University.

Of the women of the University 144 lived in Sage College. The new Annex, which was ready for occupancy in September, increased by one half the capacity of the building. The commodious and well-equipped gymnasium on the first floor enables the women of the University to enjoy the same advantages as men in systematic physical training, and Miss Canfield, to whom the Director of the gymnasiums has exclusively delegated the function of instructing them, has filled the office with great energy and enthusiasm. Mr. E. P. Gilbert, who has been business manager at Sage College for 14 years, retires at the close of the present year on account of poor health. Mr. Gilbert has been a model officer; and while his administrative ability, prudence, trustworthiness, and patient and careful supervision of details have won for him in an unusual degree the esteem and confidence of the Trustees, his gentleness, thoughtfulness, and many acts of kindness and affection will endear his name to all who have lived in Sage College during the 14 years of his management. The death of Mr. George L. White, the Assistant Manager, robbed Sage College of a highly valued officer, whose noble Christian spirit and life were felt as a benign influence throughout the wider circles of the University. The work of the Principal, Mrs. Hooker, has gone on in the same even tenor, and with the same good results, as in previous years. It is impossible to describe it with any fulness, because as she herself says "the work of the Principal of Sage College is so absolutely the aggregate of details that may never be classified, and her life is so essentially absorbed in other lives whose needs are hidden even to her view."

THE COLLEGE OF LAW

The year has been characterized by an unusually large enrollment of students, by severer tests of their work in course, and by a marked advance in the requirements for admission. Including 48 students from other courses who elected work in Law, the total attendance was 256. The age and geographical distribution of the law students proper will be found on p. 23 and p. 21 of this Report. Hereafter students will be permitted to enter at the age of 18 instead of 19 as heretofore. In and after 1898 the qualifications for admission to the College of Law will be the same as those for admission to the Academic Department. "Experience," says Judge Finch, "more and more impresses upon us the wisdom of requiring a full preparation for the work of the School."

The extension of the course from two years to three takes effect in 1897. The two changes will put the Cornell College of Law in the highest category of American institutions devoted to legal scholarship and training. No other will surpass it in the length of its course of study, no other will surpass it in the height of its standards for admission (excepting one which confers the Law degree on college graduates only) ; and in both respects not more than two or three institutions on the continent can claim to be its peers.

In the report of the Director of the College (Appendix III.) there is some discussion of the question of salaries. "This," he says, "is the most pressing and important necessity to which attention should be given." It is pleasant to be able to state that the Board had already taken appropriate action in this important matter. The vacancy caused by the withdrawal of Professor Hardon (p. 8) has been filled by the appointment of Professor E. H. Woodruff of Stanford University (p. 13). Of Professor Pound, who was appointed last year, the Director reports that "to great industry and faithful study he has added the happy faculty of imparting instruction and of interesting the classes under his charge." The Faculty may now be described as peculiarly a Cornell Faculty. Judge Finch, though a Yale graduate, was one of the early builders of Cornell University, and his colleagues are all former students of the University, from which some of them hold both an academic and a professional degree. This filial relationship and the generous and unsolicited action of the Board furnish some assurance of the realization of Judge Finch's hope that as the College of Law has now "an ambitious, harmonious and hard-working Faculty" it may henceforth also have a "permanent" Faculty.

The Director's report is another reminder of the need of a special endowment for the library of the College of Law. The cost of its annual maintenance is increasing ; and extra appropriations are constantly called for to meet special needs. The courtesy of the Judges of the Court of Appeals in furnishing the Director of the College of Law with the cases and briefs used in that court should certainly be acknowledged by the binding and proper care of the volumes ; but up to this time money for the purpose has not been available. Law is a science whose facts and principles are all contained in books. The Moak collection, the gift of Mrs. Douglas Boardman and Mrs. George R. Williams, has been a most fruitful and beneficent power in the development of the College of Law. For further development there is now needed an endowment to maintain and increase the library. A gift of $100,000 would provide the necessary income.

THE COLLEGE OF AGRICULTURE

The raising of the requirement for admission to the course in Agriculture has been mentioned in another section : in and after 1898 the matriculant must pass on one of the groups of subjects—French, German, and Higher Mathematics—laid down for entrance to the Academic Department. At present the degree conferred on graduates in the course is B.S. in Agriculture. With the abolition of that degree in all other courses, there seems no reason for retaining it in Agriculture, where the significance of the symbolic letters was always determined by the attached predicate. As the other Professional Colleges of the University all have specific degrees for their graduates, the logic of the case points to the degree of Bachelor of Agriculture for graduates in that course. The matter demands early and careful consideration from the Faculty of the College. At the same time it may be advisable to inquire whether any revision of the course of study now prescribed for students is desirable. One point must not be overlooked. Students in Agriculture now receive free tuition at the University ; and, so long as there is a distinctive course for them, the privilege, it is hoped, will be continued. But if the course were merged in any other, if it embraced studies belonging for the most part to the Academic Department, it would be impossible to distinguish *bona fide* students in Agriculture from others, and the Board, it is safe to predict, would repeal the statute under which they are now exempted from the payment of tuition fees. All these matters will doubtless receive prompt and thorough consideration from the Faculty of Agriculture.

The most noticeable feature of the year is the increase in the number of students taking graduate work, most of whom were from other colleges. To this point the Director calls special attention. Besides four candidates for an advanced degree with Agriculture as their major and four candidates for an advanced degree with Horticulture as their major, there were several other graduates who took the advanced instruction without becoming candidates for a second degree. Professor Bailey declares that "no such company of students of high attainments has ever before come together for instruction in Horticulture in America." The demands upon his department were so great as to necessitate an increase of equipment for which the Trustees have made provision. In this connection it may be stated that arrangements have been made for removing the gardener's cottage from the low ground on which it now stands to a high knoll situated to the rear of the forcing house, for erecting a second cottage for the occupancy of the man-of-all-work employed in the forcing house, and for a considerable reconstruction of the greenhouses, with the addition of a tower room in which microscopic work can be done, and drafting, when studying the construction of greenhouses and similar subjects. These improvements will also add much to the appearance of that part of the grounds in which the horticultural buildings are located and which has now become conspicuous because of the increased use of the east and west highway across the campus.

In the courses leading to degrees—first and second—the College of Agriculture trains men as experts in the agricultural sciences. These graduates are eagerly sought by the appointing boards of Agricultural Colleges and Experiment Stations ; the appointment of the Fellow, Mr. George Harold Powell, to a professorship in Delaware College, and that of Mr. J. C. Blair to be Horticulturist to the University of Illinois furnish a good illustration among the advanced students of the present year. It is believed that no other college of Agriculture in America has, in this respect, so fine a record. But while the College aims to be, in both instruction and investigation, the exponent of the highest reach of the agricultural sciences, and while its work has elicited the commendations both of sister institutions and of the State and National departments of Agriculture, it maintains the policy of supplementing its theoretical activities by practical efforts to improve and elevate the condition of the farmers, fruitgrowers, and dairymen of the State of New York. For the accomplishment of this end different means have been used. Not the least effective was the establishment in 1893 of the Winter Course in Agriculture (including Horticulture, Dairy Husbandry, etc.) in which persons interested or actually engaged in these pursuits, without undergoing any preliminary examination, are given, without charge, all the instruction and scientific and practical training they are capable of receiving. The enrollment during the last winter term was 83. Coming as they do from all parts of the State, these young men go forth as missionaries of that knowledge which is power to all the cultivators of the soil. Earnest and industrious, they make good use of the opportunities afforded them by the College, and will without doubt render a good account both of it and of themselves in their respective homes.

But few persons engaged in tilling the soil, growing fruit, or raising flocks and herds can ever come to Cornell University. Hence the necessity of the College of Agriculture going to them. And in their gatherings in different parts of the State lectures and addresses are, as a matter of fact, often given given by members of the Cornell Faculty of Agriculture. But the staff is not large enough to do its own work at home and at the same time to dispense information to the agriculturists, horticulturists, and dairymen of the State. The Legislature in 1895 appropriated $16,000 to enable Cornell University to conduct investigation and instruction in Horticulture in the Fifth Judicial Department. Under the supervision of Director Roberts the work was devolved upon Professor Bailey, to whom a special staff was assigned, and the results were of such a character that the Legislature of 1896 appropriated $16,000 for the same purpose. Professor Bailey has thrown the work under this grant into three lines, experiment or research, teaching, and publication. Up to the first of September, 1896, 38 bulletins have been published on the State funds, and the investigations have been completed for a dozen others. Many schools and meetings have been held, and over twenty more are to be held during September, 1896. These schools are designed to give the latest and best instruction and information upon subjects of soil fertility, rural economics, and matters pertaining specifically to horticultural pursuits. Eight instructors are employed for the teaching campaign of the present year.

The experience of the last two years demonstrates both the need and the value of this work. And though the Legislature has hitherto acted without solicitation or even consultation with Cornell University, it may not be improper now to point out that, if the field of operations were extended from one Judicial Department to the entire commonwealth and the subjects of instruction were Agriculture and Dairy Husbandry as well as Horticulture, the State would be in possession of a system of University Extension for the benefit of farmers, with Cornell University as organ, under which the treasuries of modern science might be made immediately available and practically serviceable for the improvement of the condition of the agriculturists, horticulturists, and dairymen of New York. The annual appropriation for this general purpose need not greatly exceed what is now spent for a partial undertaking in a limited portion of the State. Cornell University stands ready to co-operate with the Legislature in this scheme of University Extension in Agriculture; but it is for the Legislature, or for the people, and not for Cornell University to take the next step in its development. It is surely the hope of all patriots that the State will not lay itself open to the charge which the London Times recently brought against the policy of Great Britain. "Our agricultural distress," said that journal on November 29th, "might be alleviated were the State not far above the education of the population in the minor agricultural arts and the organization of agricultural industries after the manner in vogue on the Continent."

THE COLLEGE OF ARCHITECTURE

The Department of Architecture has been raised to he status of a College and Professor Charles Babcock, the head of the department, was appropriately appointed the first Director of the College. The staff has already been enlarged, and an appropriation of $30,000 has been made for an addition to Lincoln Hall, which for the meantime must house both the College of Architecture and the College of Civil Engineering. The enlarged building will in a few years be needed by the latter College, which even at this time is straitened for space. There is, therefore, a very real need of a separate home for the College of Architecture; and the opportunity is a rare one for some friend of the University and lover of the fine arts to erect his own monument by the gift of a building which, illustrating the architect's ideal, shall crown, like a thing of beauty, this romantic site, which is dedicated not more to the realism that makes a living than to the everlasting idealism that makes life worth living.

The effects of the raised entrance requirements are discernible in the attendance (see p. 17); but the quality of the students has been greatly improved.

In the work of instruction the staff was during the winter term reinforced by the assistance of Mr. Raymond F. Almirall, a former graduate, recently returned from the École des Beaux Arts, whose services were much appreciated.

Next year for the first time, there will be a separate instructor of Free Hand Drawing, which in the past students in Architecture have taken in Sibley College. But this and other changes may more appropriately find record in next year's Report.

THE COLLEGE OF CIVIL ENGINEERING

The requirements for admission to the course in Civil Engineering have been raised to the level of those to the courses in Architecture and Mechanical Engineering. This addition of Advanced Algebra and Plane and Spherical Trigonometry goes into effect in 1898. Though it may reduce for a time the number of students, those who enter will be capable of doing better work, and it is only a question of time when the attendance will be greater than ever. The figures for the last five years are given on page 18.

The Faculty of the College of Civil Engineering has been overworked and the Trustees this year established an additional instructorship, which has been filled by the appointment of Mr. E. B. Lovell. But the great event of the year was the decision to build an Hydraulic Laboratory beside the Triphammer Falls in Fall Creek. There has been of late years, it must be premised, a great proportionate increase in the importance of hydraulic problems. Water supply and sewerage systems, river regulation and irrigation works, canals and harbors depend for their integrity upon the degree to which their design and construction are in harmony with the laws of hydraulics. Such works are to-day often of a magnitude but recently considered altogether impracticable. The accurate experimental study of resistance to the resultant forces of great masses of water, and of the useful application of them with a minimum expenditure of effort, and the consequent ability to express their laws with mathematical exactness, is to-day far behind the need of the profession. Many of the empirical formulæ now in use are the roughest approximations. This is due to the fact that existing laboratories deal with such small forces and apparatus that it is impracticable to apply their results to the solution of many difficult problems which come up in important hydraulic works. There is no laboratory existing in which the characteristic problems of river regulation and harbor building can be studied. To provide for this need would have required, under ordinary conditions of water supply and topography, an expenditure beyond any resources except those of a municipality or state. Fortunately the local conditions in these respects are at Ithaca favorable to a truly remarkable degree, and it is a matter for congratulation that it is practicable for the University to increase its scope and direct usefulness to the community in so large a measure.

The laboratory includes a canal excavated through rock along the south edge of Fall Creek Gorge from Triphammer Falls reservoir to the face of the cliff overlooking the Falls. At the lower end a side channel branches to a vertical steel stand pipe standing on a level with the foot of the Falls. In order that the supply of water for the stand pipe in ordinary circumstances may be independent of the conditions of flow in the canal, a 30-inch pipe leads under the bed of the canal from an auxiliary entrance chamber provided for the purpose to the feed pipe and side channel connecting the canal and stand pipe. Under normal conditions of usage, the supply to the stand pipe will be drawn entirely from the 30-inch pipe. The distinctive features of the canal are the double entrance chamber and double system of gates, ample weir chambers, and side waste weirs. The canal proper is 400 feet long, 16 feet wide and 12 feet deep, lined with concrete, backed with asphaltic waterproofing to insure against leakage, and there is an under channel for the thorough sub-drainage of the surrounding rock strata. A waste weir set at the foot of the canal allows the entire flow to be wasted over the cliff except when it is desired to turn the flow through side gates into the stand pipe feeder. The discharge into the stand pipe through the 30-inch pipe, is measured by a weir set in the auxiliary entrance chamber. The riveted steel stand pipe 6 feet in diameter and 60 feet high is fitted with openings at intermediate heights which are suitably housed and connected by a staircase. The base of the stand pipe is in a laboratory building 24 feet by 50 feet, set at the foot of the Falls. A large reservoir is necessary for the successful performance of the more extensive experiments, and the present Triphammer Falls reservoir will provide available storage for a number of million gallons of water. The watershed contains 117 square miles, and contributes a supply varying from 12 cubic feet per second as a minimum to 4700 cubic feet per second in times of greatest floods.

The Director has taken a census of the graduates in Civil Engineering since the foundation of the College a little over twenty years ago to June, 1895, with a view to ascertaining the positions held by them at the date of the census. The showing is highly satisfactory. Civil engineers, it may be premised, have to do with the construction and care of railways, bridges, water works, manufactories, etc. Now Director Fuertes's census shows that out of the 386 men who graduated in the period above described, 16 are presidents of industrial corporations and railways, 103 are chief engineers, superintendents, and managers, 37 are professors and instructors (22 being full professors) in universities, 25 are assistant chiefs, resident and division engineers, 72 are assistant engineers, 14 are draughtsmen, 52 are in allied professions (mining and mechanical engineering, architecture, law, etc.), 22 are in miscellaneous pursuits (business, banking, farming, etc.), while 11 were not located at the date of taking the census, 6 were not heard from, and 28 had died. It will be seen that a little over half the graduates in Civil Engineering are found among the four highest ranks of professional life. It is also a significant fact that though the engineer usually enters his profession through the "Draughting Room," less than 4 per cent of the Cornell graduates have remained draughtsmen ; and of the 14 reported as draughtsmen 10 are generally computers or designers of structural work. On the basis of these returns, therefore, the probabilities that every hundred men whom Cornell University graduates from the College of Engineering have of belonging to any one of the nine professional ranks for which their education is available, are as follows: presidents, 4.47 per cent; chief engineers, superintendents, and managers, 28.77 per cent; professors, 10.34 per cent; assistant chiefs, resident and division engineers, 6.98 per cent; assistant engineers, 20.11 per cent; draughtsmen, 3.92 per cent; allied professions, 14.52 per cent; miscellaneous, 6.15 per cent; not heard from, 4.74 per cent.

The returns here briefly summarized are a striking and unimpeachable testimonial to the high character of the work which for more than a score of years the College of Civil Engineering has accomplished under the direction of its present efficient head.

THE SIBLEY COLLEGE OF MECHANICAL ENGINEERING AND MECHANIC ARTS

The attendance in Sibley College has been discussed on page 17. If the number of students in 1895–96 was smaller than it has been since 1890–91, this is due to the operation of the advanced requirements for admission which went into effect in 1894. The number of new students entering last year was, however, greater than in 1894–95; so that it is only a question of time when the maximum registration of 1893–94 will be regained and passed. The Director reports a great improvement in the quality of the preparatory education of the matriculants. And the elevation of the standards for admission, which was demanded alike by the ideals of Cornell University and the aspirations of the profession of mechanical engineering, has had a most beneficial influence upon the constitution of the curriculum of the course. Calculus has been pushed back into the freshman year, and applied mechanics into the sophomore, thus leaving five hours in the junior year to be filled by additional professional work. This is a further development of Director Thurston's policy of making the course, as completely as possible, a strictly professional course,—it being understood that candidates shall have completed their general education before entering upon this specialized training. The gap in the junior year has been filled in a way equally advantageous to the general mechanical engineer and to the specialist in electrical engineering. Both need more instruction in general design, and the former needs some knowledge of the designing of electrical machinery ; for, if electrical engineering is nine tenths mechanical, mechanical engineering is nowadays at least one tenth electrical. Of the five hours, two are assigned to Professor Barr for general design, and two to Professor Ryan for the designing of electrical machinery, while an additional hour will be allowed to the work in experimental engineering, which has hitherto been much embarrassed for lack of proper time. To provide for the additional instruction thus thrown upon the College, the Faculty has been increased by the appointment of two new instructors. If in this College and others, and indeed in all the departments of instruction in the University, it were possible to promote all worthy instructors and assistant professors, the heads would be greatly gratified and relieved of considerable anxiety.

The Director reports that "the equipment of the College is a good one for its present courses." But while the buildings presented at different times by Mr. Hiram Sibley and by his son, Mr. Hiram W. Sibley, all serve admirably the purposes for which they were intended, the need of a new building for Experimental Engineering is coming to be keenly felt. The annex in which that department is now accommodated will be required, as soon as means can be secured for the purpose, for an extension of the work-shops so as to provide for instruction in brass-working, dynamo-construction, and other branches accessory to the finer sorts of machine work. It is hoped that these objects will commend themselves to friends of the University who appreciate the value of the practical education supplied by Sibley College. And besides these must be mentioned Locomotive and Railway Mechanical Engineering, for which nothing but lack of funds has prevented the Board establishing a department in Sibley College. The Trustees are ambitious to maintain the College on the high plane it has already reached, and they appeal to a generous public to give them the necessary support.

There is much misunderstanding and gross exaggeration in regard to the aid which Congress grants Cornell University for the maintenance of instruction in the Mechanic Arts and Agriculture. The sale of the land scrip granted under the Morrill act of 1862 yielded $603,000 ; and of this endowment the "leading object" was, "without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to Agriculture and the Mechanic Arts." This, with Mr. Cornell's gift, was the financial basis of Cornell University. Besides this endowment, Congress in 1887 voted $15,000 a year for experimental work in agriculture in each of the States, and of this appropriation $13,500 is received by Cornell University for the Agricultural Experiment Station. This act is known as the Hatch Act. Then in 1890 the second Morrill Act was passed by Congress, under which an annual appropriation, beginning with $15,000 but amounting eventually to $25,000, was made to each of the colleges founded on the land grant of 1862 ; but this appropriation was made neither for Agriculture alone, nor for the Mechanic Arts alone, nor merely for both of them together, but for the purpose specified in the act, namely : "Instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural and economic science, with special reference to their applications in the industries of life and to the facilities for such instruction" Cornell University uses this appropriation in strict conformity with the terms under which it was made by Congress.

The hope for the higher work in Mechanical Engineering is that Congress will establish Experiment Stations in Mechanical Engineering as by the Hatch Act of 1887 it established Experiment Stations in Agriculture. Such future legislation is logically involved in the measures already enacted. That is to say, the National Government, in providing means for instruction, puts Agriculture and the Mechanic Arts on the same footing : it has already established stations for experimental work in the former, can it refuse to establish stations for experimental work in the latter? A bill to that effect was introduced in both branches of Congress last winter, and though, owing to the pressure of other business, it did not pass, it had the support of many prominent legislators. Its passage would be the culmination of the wise and beneficial legislation initiated, during the Civil War, by the confident and patriotic foresight of the now venerable Senator Morrill. The proposed bill follows the general lines of the Hatch Act, but with such modifications as experience with that measure shows to be advisable. Under the operation of such a law a great impetus would be given to the advanced work in Mechanical Engineering already organized in Sibley College, and, with the power of adequate appropriations assured, experiments could be undertaken of a variety and magnitude now only dreamed of, but of a promise and potency certain to augment man's control over the forces of nature, which is the basis of modern and especially American civilization. Unceasing investigation and experiments innumerable are the conditions of progress in the physical sciences. The work is costly, but it is promising. As Sir Benjamin Baker, the president of the British Institute of Civil Engineering, said in his late inaugural address, "a new branch of engineering might quickly result from some apparently trivial laboratory discovery." The government of the United States owes not less to mechanical than to agricultural science. With the gradual exhaustion of the coal fields of the world, it is now a practical and even urgent question,—a question which carries with it the destiny of nations,—how means may be discovered to tap the great stores of energy around us. The future existence of the nation, as well as the progress of present civilization, demands the maintenance of abundant research in engineering science.

THE NEW YORK STATE VETERINARY COLLEGE

The Legislature of 1894 passed an act of which the first words were the following: "There is hereby established a State Veterinary College at Cornell University." In that year and the following legislative appropriations aggregating $150,000 were made for the construction of suitable buildings and equipment for the institution. And the Legislature of 1896 made provision for its support by putting an item for that purpose of $25,000 in the Appropriation Bill, which provides for the maintenance of the State Government and State institutions. These successive measures were all introduced and conducted to a successful issue by Senator E. C. Stewart, whose name is thus indissolubly associated with the establishment of the State Veterinary College at Cornell University. The Stewart acts and the statutes of Cornell University in relation to the State Veterinary College are printed in the recently issued announcement of the College, which is sent freely to all applicants.

The administration of the State Veterinary College is in the hands of Cornell University. As soon as the Legislature provided, in the Appropriation Bill, for its support, it became necessary to secure experts to carry on the work of investigation and instruction in animal diseases to which the College is dedicated. Appointments to the staff were made by the Board of Trustees at their June meeting, except one chair which has since been filled. The Faculty as thus constituted consists of the following members, all of whom enter upon their duties in September:

Director of the State Veterinary College and Professor of Veterinary Medicine, Principles and Practice, Zymotic Diseases and State Medicine: James Law, F.R.C.V.S. Professor of Veterinary Science in Cornell University. Formerly Professor of *Materia Medica* and Anatomy in the Edinburgh New Veterinary College and the Albert Veterinary College. Chairman of the U. S. Treasury Cattle Commission, State Veterinarian of New York, Consulting Veterinarian to the New York State Agricultural Society, Chief Director for the U. S. Bureau of Animal Industry for the suppression of Lung Plague in the Mississippi Valley and in New York. Member of the Tuberculosis Commission of the State of New York, Chairman of the Regents' Board of Veterinary Examiners for New York. Author of General and Descriptive Anatomy of the Domestic Animals, the Farmers' Veterinary Adviser, and numerous monographs on veterinary subjects.

Professor of Veterinary and Comparative Pathology and Bacteriology: Veranus Alva Moore, B.S., M.D. Chief of the Pathological Division of the U. S. Bureau of Animal Industry, Washington, D. C. Professor of Pathology in the National Veterinary College, and of Histology in the medical department of the Columbian University, Washington, D. C. Author of numerous bulletins on the Pathology and Bacteriology of Animal Diseases, published by the Bureau of Animal Industry.

Professor of Microscopical Technology, Histology, and Embryology: SIMON HENRY GAGE, B.S. Professor of Anatomy, Histology, and Embryology in Cornell University; late chairman of the section of Biology of the American Association for the Advancement of Science, and President of the American Microscopical Society. Author of notes upon Histological Methods, The Microscope and Microscopical Methods; joint author of Anatomical Technology, contributor to Wood's Reference Hand-Book of the Medical Sciences, to Foster's Medical Dictionary, and to various scientific periodicals and transactions.

Professor of Veterinary Surgery, Obstetrics, Zootechny, and Jurisprudence: WALTER LONG WILLIAMS, D.V.S. Professor of Veterinary Science and Physiology in the Montana College of Agriculture and Mechanic Arts, and Veterinarian to the Montana Agricultural Experiment Station; formerly Professor of Veterinary Science in Purdue University and Veterinarian to the Indiana Agricultural Experiment Station, Vice-President and ex-President of the United States Veterinary Medical Association, ex-President of the Illinois Veterinary Medical Association, ex-President of the Indiana Veterinary Medical Association; formerly Assistant State Veterinarian of Illinois, and Special Inspector for the U. S. Bureau of Animal Industry, Associate Editor of the American Veterinary Review. Author of Influence of Climate on the Character and Distribution of Disease, Venereal Diseases of Horses, Infectious Abortion in Mares, Rachitis in Animals, Relation of Puerperal Eclampsia in Woman to Parturient Apoplexy in the Cow, Parturient Eclampsia in the Mare, Pathology of Azoturia, Strongylus in the Mesenteric Artery of the Horse, Odontomes, The Veterinary Profession: its Needs and Opportunities for the Future, Development of the Fœtus in the Mare, etc.

Assistant Professor of Veterinary and Comparative Physiology, *Materia Medica* and Pharmacy: PIERRE AUGUSTINE FISH, B.S., D.Sc., D.V.S. Assistant in the Pathological Division of the U. S. Bureau of Animal Industry, Washington, D. C., formerly Instructor in Physiology and Vertebrate Zoology in Cornell University and in Zoology in the Marine

Biological Laboratory at Wood's Holl. Author of several papers on the structure and function of the nervous system and on pharmacological subjects.

Assistant Professor of Veterinary Anatomy and Anatomical Methods: GRANT SHERMAN HOPKINS, B.S., D.Sc. Instructor in Comparative Anatomy and Embryology in Cornell University. Author of monographs on topics in Comparative Anatomy and Histology, and on Methods of Anatomical and Physiological Demonstration.

Instructor in Microscopy, Histology, and Embryology: BENJAMIN FREEMAN KINGSBURY, A.B., Ph.D. Formerly Graduate Scholar and Fellow in Cornell University. Author of monographs on Histology and upon the Structure and Morphology of the Nervous System and Organs of Sense.

Assistant in Veterinary Bacteriology: RAYMOND CLINTON REED, Ph.B.

A course of study extending over three years of nine months each and leading to the degree of D.V.M. has been laid out for regular students. In 1897 and thereafter the requirements for admission presuppose a full high school course of four years.

It is not expected that, at the outset at any rate, the number of students will be large. The public have yet to learn the importance of education of a high grade in veterinary medicine. But experience of loss and disaster will in time teach them that quacks and mountebanks are of no more use in dealing with diseased animals than with diseased human beings. Meantime the State Veterinary College will be able to lay the greater stress on scientific investigations looking towards improvements in the breeding, care, and management of animals; towards discoveries in therapeutics, and the immunization of animals and men from contagion; and towards the production of organic compounds to be employed in diagnosis, treatment, and immunizing. Apart from the discovery of such organic compounds, the mere production, in a reliable form, of those already known is an object of considerable value; for both the State and private practitioners are making an increasing demand for them in connection with the prevention, diagnosis, and treatment of disease.

Like the Faculty of Agriculture, the members of the staff of the State Veterinary College stand ready to make occasional visits to different parts of the State for the purpose of diffusing scientific information or co-operating in the suppression of epidemics or the extirpation of diseases. The primary object of the College is to serve the State by furnishing scientific aid and protection to the farmers and stock-owners, whose animals are invaded or menaced by disease, and to the public, to whom those diseases are liable to be communicated. So far as this end can be promoted by University Extension work, every effort will be made to detail members of the Faculty of the College on that duty. But it is not improbable that a still more effective method of accomplishing the end would be the establishment of organic relations between the State Veterinary College and the State Board of Health and the State Bureau of Agriculture, which two departments are legally responsible for the preservation of the flocks and herds of the commonwealth and the protection of the health of its citizens.

THE PROPOSAL OF A STATE PEDAGOGICAL COLLEGE

The establishment of a State pedagogical institution at Cornell University for the professional training of secondary teachers and superintendents of schools was fully discussed in the Report of last year (pp. 44–52). The scheme has since been endorsed by the Superintendent of Public Instruction, Hon. Charles R. Skinner, who in his annual report recently issued recommends that the Legislature establish such a school at Cornell. The Superintendent looks at the matter entirely from the point of view of the State and especially as regards the interests of the public schools; but his treatment of the subject is so comprehensive and at the same time so wise and so fair that it is reproduced here in lieu of any independent statement.

THE STATE'S RELATION WITH CORNELL UNIVERSITY

Assembly district scholarships

The attention of the Legislature is directed to the recent constitutional increase in the number of Assembly districts in the State, in connection with the free scholarships in Cornell University. The new constitution makes 150 Assembly districts, but I feel compelled to administer my department, so far as the Assembly district scholarships in Cornell University are concerned, as though the old constitutional division of 128 districts still remained. This causes some difficulty at the present time, and unless remedial legislation is adopted it may cause embarrassment. I willingly bear testimony to the generous spirit in which Cornell University has fulfilled its charter obligations to the State. The original charter of the University enacted April 27, 1865, provided that the University should "annually receive students, one from each Assembly district of the State . . . free of any tuition fee." . . . But when the State authorities insisted that the University should keep each of these scholars four years, the University shouldered the additional burden and loyally acquiesced in the arrangement. This made 512 free scholarships. Up to 1886, however, not half of these 512 scholarships were filled. But in May, 1887, a law was passed providing for the award of scholarships left vacant in any Assembly district to candidates in other districts, so that the full quota of 512 free State students might be maintained. As a result of this legislation every entering class at Cornell University contains 128 free State scholars, and if any of them leave before graduation the Superintendent of Public Instruction has authority to fill the vacancies from eligible names on the list of contemporaneous competitors. In round numbers the free scholars at Cornell University make about one-third of the entire student body. And as the annual outlay for the education of the students at Cornell is about $500,000, it will be seen that the University spends annually about $150,000 to educate free students from the State of New York.

Appointments to vacancies

. . . No appropriation from the treasury of the State of New York has ever been made for the maintenance of Cornell University. . . .

In view of the generous spirit in which the University has fulfilled all its obligations, it cannot be expected, nor would it be just to ask, that the University should now increase the number of free Assembly district scholarships from 512 to 600 without some kind of compensation or equivalent. Indeed, even if the University saw no objection in theory to increasing the free Assembly district scholarships from 512 to 600, I know from my observation as an *ex-officio* trustee of the institution that it would be in practice impossible for it to make the arrangement, as its available income is already mortgaged for carrying on the work of instruction to which it is already committed. And as this arrangement is at once unjust and impossible, it should no longer be considered. Various suggestions have been made for overcoming the embarrassment arising from the constitutional increase in the number of Assembly districts. It has been suggested, for example, that the State should make an annual appropriation to compensate the University for the eighty-eight additional scholarships consequent upon the increase from 512 to 600. But I doubt the wisdom of this arrangement, and I understand that the University does not desire it.

Increase not just without an equivalent

Establishment of a State School of Pedagogy as an equivalent

I have had several conferences with the University authorities upon the subject. An arrangement has suggested itself which seems wise and equitable, and which I cordially commend to the consideration of the Legislature. It contemplates that Cornell University shall voluntarily increase the number of free Assembly district scholarships from 512 to 600, and that the State shall establish at Cornell University a State pedagogical department or school of pedagogy, for the professional training of college graduates and others of equivalent standing in the theory and practice of education, thus training them for positions as teachers in high schools, academies, normal schools or as superintendents of schools. This school of pedagogy would be distinguished from our existing normal schools by the fact that it would deal only with college graduates, while the existing normal schools are intended for professional training of teachers of the elementary schools.

It is apparent that the greatest gainer by this arrangement would be the school system of the State. Indeed, such an institution as the one proposed will, in the near future, be found necessary. The State of New York, by chapter 1031 of the Laws of 1895, directed that "no person shall be employed or licensed to teach in the primary or grammar schools of any city" unless he has "graduated from a high school or academy having a course of study of not less than three years," nor, further, any one who "subsequently to such graduation, has not graduated from a school or class for the professional training of teachers, having a course of study of not less than thirty-eight weeks." It is thus recognized that the high school and the training class or normal school are the fountain-heads of all proper elementary education. If the teacher in a primary school must graduate from a high school, the intention of the law can be carried out only when the teachers employed in the high school are fully competent; for otherwise the graduate thereof will not have attained that degree and kind of education contemplated by the law quoted. It is equally obvious by what rule the competence of a high school teacher should be determined. If, as the Legislature has indirectly declared, a primary teacher is competent, only when he is a graduate of the school of the next higher grade, and also of a school of professional training, then, by the same rule, a secondary teacher is competent only when he has graduated from a school of the next higher grade, that is, of collegiate grade, and has received his proportionate share of professional training in a school likewise of higher grade. If, then, the laws already on our statute books are to be carried out as they were intended to be, there must be provided for the teachers in our high schools and normal schools and for the superintendents of schools proper centres for liberal and professional training. The former, the school of liberal training, needs no further consideration, for the State is dotted with colleges. . . . That the ideal pedagogical college must be nonsectarian needs no argument; that it should be co-educational is evident from the fact that five-sixths of the teachers of our State are women.

Higher technical training demanded for higher positions

Recommendation of a State School of Pedagogy and the reasons therefor

Therefore, in view of the fact that Cornell University completely fulfills all the necessary conditions and is, through the 512 free scholarships, closely allied to the State, I respectfully recommend that a State college of pedagogy be established in connection with that University. And since the University authorities have indicated a willingness to accept cheerfully the additional expense of increasing the number of State scholarships from 512 to 600, in return for the location of the proposed State teachers' college at Cornell, I feel there can be no doubt of the wisdom of so doing. The method of affiliation of the proposed State teachers' college with Cornell University would give no difficulty, as there is a precedent in the act providing for the administration of the State Veterinary College, which directs that all buildings, furniture, apparatus and other property furnished by the State shall remain the property of the State, and shall be merely administered by the authorities of the University, and that the University shall receive no income, profits or compensation, but that all moneys or other property received for tuition or from other sources shall be the property of the State, and shall be kept in a separate fund. Nor is it without precedent to vest the administration of the proposed State teachers' college in the board of trustees of Cornell University, inasmuch as the administration of the State normal schools is now vested in local boards.

It is next to be noted in this connection that the city of Ithaca is and has been desirous of having a State normal school located at that place. While I cannot recommend the duplicating of facilities provided in the twelve existing normal schools located elsewhere in the State, I may well recommend the location at Ithaca of a State Normal school or teachers' college of such peculiar functions as I have been at pains to describe, an institution which, founded under the conditions recommended, would cost little, if any, more than an ordinary State Normal school, and would give the highest pedagogical training to college graduates, and others of equal standing.

THE LIBRARY

It appears from the report of the Librarian (see Appendix IV.) that 12,023 volumes were added to the General Library during the year ending July 31st. Of these accessions not less than two thirds were purchased from the income of the Sage endowment fund. The material results of that splendid gift are annually visible in thousands of new volumes; but its influence in the creation of a scholarly atmosphere and the development of a spirit of learned inquiry is intangible, yet it is equally real, and it is recognized and felt and gratefully appreciated by every member of the staff of instruction. Among the important purchases of the year the Librarian mentions several complete sets of authoritative works or collections dedicated to archæology, history, literature, and philosophy, and a large number of sets of literary and scientific periodicals. The Library also secured, thanks to the generosity of Mr. Herbert H. Smith, of the class of 1872, at a nominal price, a valuable collection of works, numbering about 800 volumes and 700 pamphlets, on South America, which Mr. Smith has formed during a residence of eight years in Brazil.

The gifts of the year aggregated 3565 volumes. Of these over 1300 volumes were presented by Mr. Willard Fiske as additions to the Dante and Rhaeto-Romanic collections previously presented by him. Mr. Fiske's constant and costly enlargement of the invaluable Dante collection has delayed the completion of the catalogue, for which, thanks to his generous co-operation, the University has been able to secure the expert services of Mr. T. W. Koch. Mr. Theodore Stanton and ex-President White continue to show their interest in the Library by generous gifts. For another precious gift the Library is under obligations to a member of the Faculty. Professor T. F. Crane presented his valuable collection of books on French and Italian Society in the 16th and 17th centuries, numbering about 230 volumes, of which almost all are rare and some not to be found even in the British Museum or the Bibliothèque Nationale.

An appropriation was made by the Trustees for the construction of suitable cases, to be erected in the lobby, for the display of rare and interesting books and manuscripts. An additional appropriation is requested by the Librarian for repairs and the growing cost of administration. It is proper to point out that the Library is administered with remarkable economy, and it would be poor policy to withhold whatever is reasonably needed to insure its security and enhance its efficiency. Still, this very circumstance, in view of the claims already standing against the general funds, voices an appeal for aid in the maintenance of the central and most vital institution of the University.

The Librarian calls attention to the practice of withdrawing, for the use of the departments, costly sets of books, which are thus exposed to the risks of fire ; and to the misplacing of books on the shelves by those who enjoy the privilege of admission to the stacks. The remedies suggested by the Librarian would no doubt reduce the evils to a minimum.

Statistics of the recorded use of the Library will be found in the Librarian's report Appendix IV., p. XXII.

SAGE CHAPEL AND BARNES HALL

Man is a moral and religious as well as an intellectual being. America is dedicated not more to civil than to religious liberty. The charter of Cornell University provides that "at no time shall a majority of the Board of Trustees be of any one religious sect or of no religious sect." These three facts determine both the existence and the nature of religious institutions at the University. The generosity of pious founders has turned the possibilities into actualities. The idea of Sage Chapel originated in the heart of a sainted lady whose memory its storied eastern window now enshrines; the edifice itself, the organ, the endowment for preaching, were all gifts from the several members of her family. Barnes Hall was presented to the University by the late A. S. Barnes for the use of the Christian Association; its object, as the carving in stone proclaims, being the "promotion of God's truth among men." Sage Chapel and Barnes Hall are the central organs of the religious life and work of the University community.

During the past year a change has been made in the Sage Chapel services. In previous years the custom was to have Sunday morning and afternoon services in the fall and spring terms only. In 1895–96 Sunday morning services were held in all three terms alike. The continuity of spiritual ministrations, which was in itself eminently desirable, has in its effects been a source of great good to the community. The Dean Sage preachership endowment, by means of which the most eminent clergymen of the various denominations are brought Sunday after Sunday to preach in Sage Chapel, is one of the noblest foundations any university could enjoy. The characteristic function of a university is the ascertainment and communication of knowledge and the training of youth. Linked with virtue and piety knowledge is a divine power; sundered from them it is a mere elemental force. Although religious services at Cornell must always be voluntary they can never cease to be of primary importance in the education of the students. No teacher is more effective than the inspired preacher. The University is grateful to the distinguished preachers who come from all parts of the country to minister to its members in spiritual things; among them in 1895–96 was for the first time a Jewish rabbi. Unfortunately their audiences are limited by the capacity of Sage Chapel, which the attendance at the University has now completely outgrown. This is a matter deserving the most serious consideration. At the beginning of the year new students turn out in large numbers; but finding the Chapel full they soon relinquish the attempt to secure a seat, and the congregation adapts itself, by diminution, to the provisions made for its accommodation. If the Chapel were enlarged, as it now should be, the regular audience, in accordance with the same law, would increase proportionately.

The members of the Board and of the Faculties have no official responsibility for the work of the Cornell University Christian Association. But many of them are active in aid of the work, which they rightly feel to be of special value at Cornell University, where there are no compulsory services. The president of the Association for the year 1895–96 was Mr. John Franklin Brown, a graduate student in the Sage School of Philosophy, who received the Ph.D. degree in June. In his report Mr. Brown describes the improvements which have been made in the organization of the Association with a view to the better concentration and radiation of the religious life of the University community. Everybody who is acquainted with the work of the Association must testify that it promotes social intercourse, aids new students in getting settled, fosters spiritual mindedness among its members, and stimulates and sustains Christian fellowship. As Mr. Brown says, "the Association stands not for creed but for Christ-like living." Though a voluntary organization, its end is intrinsically so exalted that the life of the University would be appreciably lowered by any decline in the spiritual power or influence of the Christian Association. Yet its inspiration and power must come from the students themselves. It is their own voluntary agency for the promotion of spiritual life. No member of the University, however, but must wish it Godspeed.

BEAUTIFYING THE CAMPUS

During the past two or three years the Trustees, through the agency of the Committee on Grounds, have made a determined effort to preserve and enhance the natural beauty of the University estate. The gorges have been cleaned and are kept clean ; the denuded places have been replenished with trees and shrubs ; the wild flowers which rubbish had choked or careless hands extirpated have been replanted in the woods where they once flourished in such profusion ; here and there over the campus new trees and flowers have been set out, and a small grove has been transplanted on the slope running south and west from the library. An attempt has also been made to grow ivies in the hard soil around the older buildings. For the improvement which these operations have wrought in the appearance of the University domain, thanks are due to the personal efforts of Mr. William H. Sage, chairman of the Committee on Grounds, who has been effectively aided by Professor W. W. Rowlee. The latter reports that a considerable accumulation of materials for future use has also been secured. Part of it was procured from the woods hereabouts, and consists of fine specimens of arbor vitæ, larch, maple, ash, linden, etc.; while the rest, which was purchased from a famous nursery, is composed of an excellent miscellaneous collection of ornamental shrubs and trees.

Professor Rowlee is of the opinion that the amount of nursery stock for use on the campus should be greatly increased ; and he suggests that the plot of ground set apart for its cultivation should be enlarged, and a house furnished for the protection of material in winter, for grafting and propagating onamental stock, and similar work. Certainly the preservation and enhancement of the natural beauty of the grounds of Cornell University is an enterprise worthy of any reasonable outlay which the Board may feel able to make. But the encouraging thing is that the marked results already achieved have cost very little money. And another inexpensive improvement, of an educational rather than an æsthetic character, would be the labeling of all trees and shrubs on the campus. To this may be added the furnishing of seats in suitable places that students may be encouraged to linger amid such ennobling influences.

These efforts at beautifying the grounds have culminated in an artistic transformation of the main approach to the campus. That portion of the University estate lying south of Cascadilla Gorge has long been an eye-sore. At its farthest corner stood Cascadilla Building, which to say the least is not a handsome structure, with the narrow carriage road winding close around its western and northern sides. From the eastern side of that building extended a plot of ground with four different grades which the electric road divided diagonally into two irregular sections. Between the electric road and the gorge the carriage way continued its course to the narrow old iron bridge which spanned Cascadilla and led to the campus proper. No one can have ever looked at this hideous collocation without feeling that it was not only an unsightly but an unseemly and unworthy approach to the most beautiful and romantic university campus in America.

But it has been conjured away, the place is to be transfigured, by the generosity and good taste of friends co-operating with the University. In June Mr. William H. Sage submitted to the Trustees a general scheme of improvement and offered to erect at his own expense a stone bridge over Cascadilla Gorge. The scheme, which was adopted, contemplated the reduction of existing grades to one uniform level, and the ornamentation of it by trees, shrubs, and flowers ; the removal of the electric road to the southern and eastern boundary line (which Mr. Sage straightened by a purchase of adjoining land); the curving of the carriage road away to the west and to the north from Cascadilla Building, which will be more or less concealed ; the reclaiming for this purpose of a portion of the bank of Cascadilla Gorge by means of masonry and earth-filling ; and the erection of a gateway at the entrance from Eddy street as soon as funds might be available for that purpose. Within twenty days Hon. A. D. White, to whom the æsthetic interests of the University have always strongly appealed, came forward with a gift for the erection of the gateway. And the entire improvement was taken in hand during the summer vacation. Instead of the old unsightliness a beautiful entrance park will soon greet the eyes of every visitor who crosses the threshold of Cornell University.

The stone arch, the gift of Mr. W. H. Sage, which re-places the iron truss bridge across Cascadilla gorge springs from the level of the old bridge abutments with a span of sixty-three feet, and a rise of eighteen feet, making the new roadway five feet higher than that of the old bridge. The face voussoirs are to be of Springport limestone one foot thick, with a thickness of arch-ring of two and a half feet. Between the face stones the arch will be composed of hard brick, and will have the same thickness of ring throughout. The spandrel walls are to be of native blue stone, rock-faced, with the Springport stone for belt courses and copings. Heavy pilasters at each end of the arch serve to break the flat surface of the spandrel walls, and give the appearance of added strength to the abutments. The width between the parapet walls is thirty feet, nearly twice that of the old bridge; the roadway proper is twenty-two feet wide, and the remaining eight feet are devoted to a broad sidewalk on the western side. The stone walls which have served as retaining walls and parapet, running south from the old bridge, are to be replaced by heavy stone posts joined by an iron railing, which will start from the arch parapet and be carried along the edge of the gorge till they meet the new gateway at the entrance to the campus.

This gateway, the gift of Hon. Andrew D. White, consists of heavy stone piers twenty-five feet in height, flanked by twelve foot walls, giving a roadway opening of seventeen feet and smaller openings seven feet in width on either side. Ohio sandstone and limestone are used in alternate courses, and each pier is surmounted by a moulded cap of Ohio stone terminating in a ball. Over the road opening is an elaborate wrought iron arch. At each end are wing walls in the center of which are placed tablets bearing the following inscriptions; upon the west wing: "So enter that daily thou mayst become more learned and thoughtful. So depart that daily thou mayst become more useful to thy country and to mankind." Upon the east wing: "The Lord bless thy going out and thy coming in from this time forth forevermore."

It is only just to add that both the gateway and the park to which it leads were designed by Mr. W. H. Miller, the architect of the University Library and Boardman Hall. The plan of the bridge was prepared by Mr. H. N. Ogden, Instructor in Civil Engineering.

THE FINANCIAL SITUATION

Mr. William H. Sage's gift for the new stone bridge over Cascadilla Gorge, and ex-President White's gift for the new entrance gates have already been mentioned. The Chairman of the Board, Hon. Henry W. Sage, has guaranteed the salary of a Professor of Semitic Languages and Literatures for two years, and Professor Nathaniel Schmidt (see p. 11) of Colgate University has been called to the chair. Mr. E. G. Wyckoff contributed $2,000 to the sending of Professor Tarr and his colleagues to Greenland on a scientific expedition for the enrichment of the geological and other collections of the University; and Mr. Wyckoff has also promised $1,000 a year for five years to enable the University to subsidize the Journal of Physical Chemistry which Professors Trevor and Bancroft have recently established. The Legislature inserted in the Appropriation Bill, which makes provision for State institutions, an item of $25,000 for the maintenance of the State Veterinary College at Cornell University. Under the so-called Nixon Bill an appropriation of $16,000 was made for investigation and instruction in Horticulture, not indeed at Cornell University, but by the Cornell Agricultural Experiment Station in the Fourth Judicial Department of the State.

The Treasurer's report shows that the available income for the year 1895–96, including the surplus from the preceding year, was $581,255.22; but of this amount $45,000, which was used for the erection of the Annex to Sage, was transferred from the Sage College Endowment Fund. Only about one fifth of the income was received from tuition fees, namely, $117,449.16. The average rate of interest on investments in 1895–96 was 5.877 per cent as compared with 6 per cent in 1894–95.

The University has now reached a critical period in its development. Larger endowments are imperatively needed if it is to keep abreast of the demands of our progressive civilization. It cannot stand still; it must either go forward or backward. And it cannot go forward without more money. This subject of ways and means was set forth with much fidelity and impressiveness in a communication from the Chairman of the Board, whom illness—a new, and as his colleagues trust, a transient experience—detained from the June meeting. The letter was made a special order for the October meeting. It is not known whether the Chairman, whose health fortunately is improving, will deem it prudent to undertake the task of presiding over that meeting; but his letter is a faithful portrayal of the situation and a forcible reminder of the duties which now devolve upon the Board; and his words are backed by twenty years of arduous and devoted service to the University and by gifts aggregating nearly one and a quarter million dollars. Mr. Sage's communication was in the following terms:

ITHACA, N. Y., June 17, 1896.

To the Trustees of Cornell University:

GENTLEMEN:—It is with sincere regret that I must tell you I cannot be present at your deliberations this day.

For more than twenty years I have attended every meeting of the full Board. But a very severe illness, which for near three months past has wholly disabled me, holds me now with a grip so firm that I am without power to do anything which requires continuous work.

I have hopes of early recovery, but nothing is certain, and must accept whatever Providence imposes.

I am informed that the regular business before you to-day will be small. The Treasurer's and Land Committee's report, appropriations, etc., all come at the next meeting, and the Executive Committee has kept in hand and disposed of nearly all minor matters of business. It has been my purpose to suggest to-day several matters pertaining to the future of Cornell University, We need suggestions, discussions and action about financial policies, and ways and means to sustain our present position and provide for future expansion. The whole of one session could not be better used than in exhaustive attention to this subject. We have already carried Cornell to a prominent elevation among educational institutions of this land, and this has been done without calling upon this Board or its predecessors for much effort in providing capital for its up-building. That has come largely from land sales and a few private benefactions. But these are exhausted or tied up in investments to produce income. For the future we have new duties and no resources available for new expansion, and for the inevitable increase of wants for what is already established. If we are to be progressive it must be because the Trustees by zeal, wisdom and force of management provide the ways and means. There is no other moving power to be relied on. This burden is *ours*.

I refrain from enlarging upon this subject now, because I am informed that the Trustees present to-day will be few, and I know that several whose judgment and counsel in this matter would be very valuable will be among the absentees. But what I have said introduces a matter which is vital, and I hope the beginning of its consideration may be to-day, and that if you think it wise a future day may be fixed for discussion and consideration as broad as the subject demands.

In the hope that your counsels may be guided by wisdom, and that our beloved University may enlist zeal and building power equal to all its wants, I am, gentlemen of the Board of Trustees,

Very sincerely yours,

H. W. SAGE

Chairman.

The Chairman of the Board states the facts clearly and unreservedly to his colleagues: the University, if it is to escape a retrograde movement, needs a reinforcement of financial power, and to provide it is the duty of the Trustees ("This burden is *ours*"). How? is the question that demands immediate attention. Some of the objects for which additional funds are needed have been mentioned incidentally in different parts of this Report. But they are far from exhausting the list. The University is still without Commons and Dormitories which would afford comfortable homes to students, reduce their cost of living, prove a good investment, and supply the conditions for the generation of that impalpable, but invaluable, power which is known as a university atmosphere or a college spirit. An Administration Building would furnish the Treasurer with a private office, which is now denied him, and the Faculties with meeting-rooms, which in earlier days they enjoyed in Morrill Hall. No other university of the standing of Cornell is without an Astronomical Department and Observatory; and for the purposes of instruction and ordinary investigation the blank could be filled by a gift of a quarter of a million dollars as shown in last year's Report. Now that the State Veterinary College is in operation, it is possible for Cornell to become a strong centre of biological, histological, and bacteriological work; and an endowment for a College of Medicine would enable the University to plant the oldest of the learned professions on the latest scientific basis, while at the same time rounding out the circle of Professional Colleges which the charter contemplated in its scheme of "liberal and practical education." A College of Fine Arts—including Music, Painting, and Statuary—is still only an aspiration. And though the College of Architecture has an established reputation in the land, it still lacks a home in the most beautiful building which art and money can rear upon the campus. A Hall of Languages has been elsewhere mentioned as an urgent need for the accommodation of the existing Departments of Classical and Modern Languages. New professorships of Finance, of Applied Chemistry, and of different branches of Engineering would merely enable the University to respond to the demands which the public are constantly making upon it. Endowments for the Law Library and for a Department of Locomotive and Railway Mechanical Engineering are the reiterated requests of the heads of the two largest Professional Colleges in the University.

That the University is suffering from unsatisfied wants does not admit of doubt. It is for the Trustees to determine which of them have reached the most acute stage and to administer the necessary relief. Nothing but more money is needed to make the work and influence of the University vastly greater than it has ever yet been. Yet few institutions at home or abroad have ever accomplished so much in twenty-eight years. Let the past prove an admonition and encouragement for the future! And in that hope the President remits the entire subject to the Trustees, who alone are responsible for the issue.

The Appendices contain much valuable information concerning the condition, work, and needs of the University. The first presents the appointments for the year, the second is the report of the Dean of the General Faculty, the third is the report of the Dean of the School of Law, the fourth is the report of the Librarian, the fifth is a conspectus of the classes taught by the several members of the Instructing Staff, and the sixth is a list of their publications from April, 1895, to June, 1896. Taken together these Appendices make a tolerably complete and (it will be recognized) a highly creditable showing of the activities of Cornell University for the year 1895–96.

J. G. SCHURMAN

President.

APPENDIX I.

APPOINTMENTS AND REAPPOINTMENTS.

The following appointments were made to the corps of instruction to take effect, unless otherwise stated, at the beginning of the collegiate year 1895–6:

F. S. Crum, Assistant to the Registrar, September 24, 1895.
H. S. Potter, Assistant Librarian in the Law Library, September 24, 1895.
B. B. Stroud, Instructor in Physiology, Vertebrate Zoology, and Neurology, September 24, 1895.
R. H. Keays, Instructor in Civil Engineering, September 24, 1895.
J. T. Parsons, Instructor in Civil Engineering, September 24, 1895.
O. Shantz, Assistant in Mechanical Engineering, September 24, 1895.
M. E. Harpster, Assistant in Architecture, Fall and Winter, October 15, 1895.
W. W. Hall, Instructor in Cheese Making, for Winter Term, November 5, 1895.
J. Van Wagenen, Instructor in Butter Making, for Winter Term, November 5, 1895.
T. W. Koch, Cataloguer in Library for a term of seven months from December 1, 1895, November 13, 1895.
L. A. Clinton, Assistant in Experiment Station, for a term of six months beginning January 1, 1896, November 26, 1895.
R. F. Almirall, Instructor in Architecture, for Winter Term, December 17, 1895.
H. W. Tomlinson, Librarian in Department of Architecture, December 17, 1895.
G. F. Danforth, Assistant in Reference Library, from January 1, 1896, December 17, 1895.
W. Beahan, Lecturer on Railway Engineering in the College of Civil Engineering, for balance of collegiate year, January 14, 1896.
E. A. Butler, Clerk in Experiment Station (to take effect at once), March 24, 1896.
O. Shantz, Instructor in Experimental Engineering (to take effect at once), March 24, 1896.

The following appointments have been made to the corps of instruction, to take effect, unless otherwise stated, at the beginning of the year 1896–7:

*A. N. Prentiss, Professor of Botany *Emeritus* (to take effect immediately), February 25, 1896.

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* Since deceased.

G. F. Atkinson, Professor of Botany, with special reference to Comparative Morphology and Mycology, March 4, 1896.
J. Seth, Sage Professor of Moral Philosophy in The Sage School of Philosophy, March 10, 1896,
C. Babcock, Director of the College of Architecture, May 19, 1896.
R. S. Tarr, Professor of Dynamic Geology and Physical Geography, June 17, 1896.
E. H. Woodruff, Professor of Law, June 17, 1896.
H. S. White, Dean of the University Faculty, June 22, 1896.
T. F. Crane, Dean of the Faculty of Arts and Sciences, June 22, 1896.
W. S. Schuyler, Professor of Military Science and Tactics (to take effect October 12, 1896), July 18, 1896.
E. C. Cleaves, Assistant Professor of Free Hand and Mechanical Drawing, May 21, 1896.
E. J. Durand, Instructor in Botany, March 10, 1896.
E. W. Olmsted, Instructor in French, May 21, 1896.
A. S. Moore, Instructor in French, May 21, 1896.
A. L. Andrews, Assistant in English, May 21, 1896.
C. R. Gaston, Assistant in English, May 21, 1896.
J. R. Lewis, Assistant in Elocution, May 21, 1896.
W. H. Edson, Assistant in Elocution, May 21, 1896.
A. E. Taylor, Assistant in Chemistry, May 21, 1896.
J. F. Snell, Assistant in Chemistry, May 21, 1896.
J. K. Hayward, Assistant in Chemistry, May 21, 1896.
O. M. Brauner, Instructor in Architecture (drawing), May 21, 1896.
E. B. Higby, Instructor in Architecture (drawing), May 21, 1896.
A. T. Bruegel, Instructor in Machine Design, June 2, 1896.
H. H. Norris, Instructor in Electrical Engineering, June 2, 1896.
M. W. Roe, Assistant in Department of Experimental Engineering, June 2, 1896.
E. F. Brauner, Instructor in Industrial Drawing and Art, June 2, 1896.
C. H. Sharp, Instructor in Physics, June 2, 1896.
O. M. Stewart, Assistant in Physics, June 2, 1896.
C. H. Benedict, Assistant in Chemistry, June 2, 1896.
E. B. Lovell, Instructor in Civil Engineering, June 17, 1896.

J. Law, Director of the State Veterinary College and Professor of Veterinary Medicine, Principles and Practice, Zymotic Diseases and State Medicine, June 17, 1896.
V. A. Moore, Professor of Veterinary and Comparative Pathology and Bacteriology, June 17, 1896.
S. H. Gage, Professor of Microscopical Technology, Histology and Embryology, June 17, 1896.
W. L. Williams, Professor of Veterinary Surgery, Principles aud Practice, Zootechny, Veterinary Obstetrics and Jurisprudence, July 14, 1896.

P. A. Fish, Assistant Professor of Veterinary and Comparative Physiology, *Materia Medica* and Pharmacy, June 17, 1896.
G. S. Hopkins, Assistant Professor of Veterinary Anatomy and Anatomical Methods, June 17, 1896.
B. F. Kingsbury, Instructor in Microscopy, Histology, and Embryology, June 17, 1896.
R. C. Reed, Assistant in Veterinary Bacteriology, June 17, 1896.

The following reappointments were made to the corps of instruction to take effect, unless otherwise stated, at the beginning of the collegiate year 1896–7:

W. W. Rowlee, Assistant Professor of Botany, with special reference to Comparative Histology and Systematic Botany, March 4, 1896.
H. C. Elmer, Assistant Professor of Latin, May 21, 1896.
H. D. Williams, Assistant Professor of Machine Design, May 21, 1896.
W. R. Orndorff, Assistant Professor of Organic Chemistry, May 21, 1896.
F. Bedell, Assistant Professor of Physics, May 21, 1896.
J. H. Tanner, Assistant Professor of Mathematics, May 21, 1896.
C. A. Martin, Assistant Professor of Architecture, May 21, 1896.
W. D. Bancroft, Assistant Professor of Physical Chemistry, May 21, 1896.
D. C. Lee, Assistant Professor of Elocution and Oratory, June 2, 1896.
J. McMahon, Assistant Professor of Mathematics, June 17, 1896.
C. H. Hull, Assistant Professor of Political Economy, June 17, 1896.
K. M. Wiegand, Assistant in Botany, March 10, 1896.
L. L. Forman, Instructor in Greek, May 21, 1896.
H. J. Edmiston, Instructor in Latin, May 21, 1896.
*L. A. Rhoades, Instructor in German, May 21, 1896.
H. P. Jones, Instructor in German, May 21, 1896.
C. P. Vergauven, Instructor in French, May 21, 1896.
F. E. Lodeman, Instructor in French, May 21, 1896.
W. Strunk, Instructor in English, May 21, 1896.
G. H. McKnight, Instructor in English, May 21, 1896.
C. S. Northup, Assistant in English, May 21, 1896.
C. J. Sembower, Assistant in English, May 21, 1896.
*H. C. Howe, Reader in English, May 21, 1896.
E. D. Shurter, Instructor in Elocution, May 21, 1896.
E. Albee, Instructor in Philosophy, May 21, 1896.
F. C. S. Schiller, Instructor in Philosophy, May 21, 1896.
D. Irons, Lecturer in Philosophy, May 21, 1896.
W. B. Pillsbury, Assistant in Psychology, May 21, 1896.
M. A. Federspiel, Examiner in American History, May 21, 1896.
C. J. Bullock, Instructor in Political Economy, May 21, 1896.
D. A. Murray, Instructor in Mathematics, May 21, 1896.
J. Allen, Instructor in Mathematics, May 21, 1896.

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*Since resigned.

J. I. Hutchinson, Instructor in Mathematics, May 21, 1896.
V. Snyder, Instructor in Mathematics, May 21, 1896.
H. J. Hotchkiss, Instructor in Physics, May 21, 1896.
F. J. Rogers, Instructor in Physics, May 21, 1896.
*C. P. Matthews, Instructor in Physics, May 21, 1896.
C. D. Child, Instructor in Physics, May 21, 1896.
C. E. Timmerman, Instructor in Physics, May 21, 1896.
J. S. Shearer, Instructor in Physics, May 21, 1896.
*C. H. Sharp, Assistant in Physics, May 21, 1896.
F. C. Fowler, Mechanician in the Department of Physics, May 21, 1896.
F. L. Kortright, Instructor in Chemistry, May 21, 1896.
E. M. Chamot, Instructor in Chemistry, May 21, 1896.
F. D. Smith, Instructor in Chemistry, May, 21, 1896.
B. S. Cushman, Assistant in Chemistry, May 21, 1896.
*D. A. Morton, Assistant in Chemistry, May 21, 1896.
G. P. Knox, Assistant in Chemistry, May 21, 1896.
A. D. MacGillivray, Assistant in Entomology, May 21, 1896.
*G. S. Hopkins, Instructor in Physiology and Vertebrate Zoology, May 21, 1896.
B. B. Stroud, Instructor in Physiology and Vertebrate Zoology, May 21, 1896.
J. A. Bonsteel, Assistant in Geology, May 21, 1896.
E. G. Lodeman, Instructor in Horticulture, May 21, 1896.
H. N. Ogden, Instructor in Civil Engineering, May 21, 1896.
C. W. Comstock, Instructor in Civil Engineering, May 21, 1896.
W. E. Mott, Instructor in Civil Engineering, May 21, 1896.
J. T. Parsons, Instructor in Civil Engineering, May 21, 1896.
J. F. Hayford, Instructor in Civil Engineering, May 21, 1896.
*W. K. Hatt, Instructor in Civil Engineering, May 21, 1896.
W. O. Stubbs, Mechanician in Civil Engineering, May 21, 1896.
E. T. Adams, Instructor in Mechanical Engineering, May 21, 1896.
H. S. Gutsell, Instructor in Industrial Drawing and Art, May 21, 1896.
V. T. Wilson, Instructor in Industrial Drawing and Art, May 21, 1896.
J. S. Reid, Instructor in Mechanical Drawing and Design, May 21, 1896.
D. Reid, Instructor in Mechanical Drawing and Design, May 21, 1896.
G. B. Preston, Instructor in Experimental Engineering, May 21, 1896.
A. H. Eldredge, Instructor in Experimental Engineering, May 21, 1896.
C. E. Houghton, Instructor in Experimental Engineering, May 21, 1896.
O. Shantz, Instructor in Experimental Engineering, May 21, 1896,
W. F. Raymond, Mechanician in Sibley College, May 21, 1896.
I. J. Macomber, Instructor in Electrical Engineering, May 21, 1896.
J. Wiseman, Foreman Machine Shop, May 21, 1896.
W. H. Wood, Foreman Wood Shop, May 21, 1896.
J. W. Granger, Foreman Blacksmith Shop, May 21, 1896.
J. E. Vanderhoef, Foreman Foundry, May 21, 1896.
C. L. Stanton, Assistant in Machine Shop, May 21, 1896.

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*Since resigned.

F. Starkins, Assistant in Machine Shop, May 21, 1896.
G. C. Pollay, Assistant in Wood Shop, May 21, 1896.
W. F. Head, Assistant in Blacksmith Shop, May 21, 1896.
R. Vanderhoef, Assistant in Foundry, May 21, 1896.
A. Whitlock, Lineman, May 21, 1896.
H. H. Lannigan, Instructor in Physical Culture, May 21, 1896.
Ellen B. Canfield, Assistant in Physical Culture (in Sage College), May 21, 1896.

E. G. Lodeman, Assistant in Horticulture in Agricultural Experiment Station, May 19, 1896.
M. V. Slingerland, Assistant in Entomology in Agricultural Experiment Station, May 19, 1896.
G. W. Cavanaugh, Assistant in Chemistry in Agricultural Experiment Station, May 19, 1896.
L. A. Clinton, Assistant in Agriculture in Agricultural Experiment Station, May 19, 1896.
B. M. Duggar, Assistant in Cryptogamic Botany in Agricultural Experiment Station, May 19, 1896.

George F. Foote, Manager of Sage College, January 14, 1896.

Mrs. Ellen K. Hooker, Principal of Sage College, May 21, 1896.

F. S. Crum, Assistant to the Registrar, May 21, 1896.

H. C. Howe, Private Secretary to the President, July 1, 1896.

A. C. White, Assistant Librarian, May 19, 1896.
W. H. Austin, Assistant Librarian, May 19, 1896.
M. Fowler, First Cataloguer, May 19, 1896.
T. W. Koch, Cataloguer, May 19, 1896.
E. A. Runner, Cataloguer of Zarncke Library, May 19, 1896.
M. E. Griswold, Assistant in Ordering Department, May 19, 1896.
J. Thornberg, Assistant in Accession Department, May 19, 1896.
G. F. Danforth, Assistant in Reference Library, May 19, 1896.

APPENDIX II.

REPORT OF THE DEAN OF THE GENERAL FACULTY.

To the President of the University:

SIR :—I have the honor to submit my eighth and last annual report as Dean of the General Faculty upon the work of the various committees of which that official has been *ex officio* chairman.

Under the reorganization of the faculties of the University elsewhere described, the General Faculty has ceased to exist and its functions have been assumed by other bodies. It may therefore not be improper in the present report to refer occasionally to passages in previous reports describing the functions, workings and methods of the aforesaid committees as an aid to the future conduct of business under the new system. References are further given on pages 27-28 of the "Reprints from the Faculty Records," indicating the origin and functions of all the Faculty Committees.

I. ADMISSION BY CERTIFICATE.

During the last seven years the number of applicants admitted by certificate, by Regents' Diploma, and by examination, are as follows :

	1889-90	'90-91	'91-92	'92-93	'93-94	'94-95	'95-96
Certificate	156	154	171	195	209	156	164
Regents	125	90	118	120	125	118	119
Examination	60	55	57	63	55	23	28
	341	299	346	376	389	297	311

The remaining members of the respective freshman classes were students who had been in the University before, but had been registered back for various deficiencies, or who were admitted provisionally or partly to advanced standing.

The following table indicates the comparative records of students admitted by certificate, by Regents' diploma, and by examination, who afterward proved deficient in their studies :

	Dec. 1889			Mar. 1889			June 1890			Totals		
	C	R	E	C	R	E	C	R	E	C	R	E
Dropped	5	5	7	8	1	1	7	2	0	20	8	8
Reinstated next term	2	1	1	1	0	0	3	1	0	6	2	1
Net number dropped	3	4	6	7	1	1	4	1	0	14	6	7

Percentage of students in each category who proved deficient :
Certificate, 8.98 ; Regents, 4.8 ; Examination, 11.67

	Dec. 1890			Mar. 1891			June 1891					
Dropped	4	0	4	5	1	4	5	0	4	14	1	12
Reinstated next term	1	0	3	0	0	0	3	0	4	4	0	7
Net number dropped	3	0	1	5	1	4	2	0	0	10	1	5

Percentage of students in each category who proved deficient:
Certificate, 6.5; Regents, 1.1; Examination, 9.1

	Dec. 1891			Mar. 1892			June 1892					
Dropped	14	3	5	4	3	1	4	1	1	22	7	7
Reinstated next term	6	0	2	2	0	1	2	0	1	10	0	4
Net number dropped	8	3	3	2	3	0	2	1	0	12	7	3

Percentage of students in each category who proved deficient:
Certificate, 7.02; Regents, 5.9; Examination, 5.3

	Dec. 1892			Mar. 1893			June 1893					
Dropped	13	1	6	8	2	2	8	3	7	29	6	15
Reinstated next term	1	1	0	1	0	0	3	1	2	5	2	2
Net number dropped	12	0	6	7	2	2	5	2	5	24	4	13

Percentage of students in each category who proved deficient:
Certificate, 12.3; Regents, 3.4; Examination, 20.6

	Dec. 1893			Mar. 1894			June 1894					
Dropped	13	6	3	11	8	11	21	8	17	45	22	31
Reinstated next term	0	1	0	3	0	5	12	2	6	15	3	11
Net number dropped	13	5	3	8	8	6	9	6	11	30	19	20

Percentage of students in each category who proved deficient:
Certificate, 14.35; Regents, 15.2; Examination, 36.36

	Dec. 1894			Mar. 1895			June 1895					
Dropped	19	5	6	9	2	5	9	2	5	37	9	16
Reinstated next term	7	1	2	2	0	2	2	0	2	11	1	6
Net number dropped	12	4	4	7	2	3	7	2	3	26	8	10

Percentage of students in each category who proved deficient:
Certificate, 16.66; Regents, 6.7; Examination, 35.7

	Dec. 1895			Mar. 1896			June 1896					
Dropped	6	4	0	8	3	2	--	--	--	--	--	--
Reinstated next term	2	0	0	5	1	1	--	--	--	--	--	--
Net number dropped	4	4	0	3	2	1	--	--	--	--	--	--

Percentage of students in each category who proved deficient:
Certificate, --; Regents, --; Examination, --

During the current year sixteen schools have been informed without comment that the work of certain students admitted by certificate from those schools had not been uniformly satisfactory. Last year one school was notified that the consideration of future certificates would depend upon the quality of the work of certain students who were to be admitted provisionally from that school during the ensuing year. After reviewing the work of these students at the end of the year, the committee decided that for the present other students coming from the aforesaid school should be examined in the advanced mathematics (See Report for 1894-95, p. 75).

The evolution of the system of admission by certificate has been described in the reports for 1888-89, pp. 45-46, and 1890-91, pp. 48-49. The workings of the system and its advantages and disadvantages have been described in the reports for 1888-89, p. 46; 1889-90, pp. 37-39, and 1892-93, p. 61. Tabulated results were given in the report for 1891-92, p. 1 of appendix I; 1892-93, p. 60; 1893-94, pp. 71-72, and 1894-95, pp. 73-74.

The subject of English has been withdrawn from the list of subjects in which students will be admitted by certificate (See Report for 1892-93, pp. 61-62; 1894-95, p. 75); and, as has already been suggested in these reports (1892-93, p. 61; 1893-94, p. 72), it may be found desirable to hold examinations for the advanced requirements in other subjects. The necessity for such examinations may appear to be more urgent after the complete introduction in 1897 of the elective system already established, a system which may present less frequent opportunity than heretofore for testing in the classrooms of the University the preparation in those special advanced subjects which students offer at entrance.

The committee has found some difficulty in establishing the line between private schools preparing students solely for specific college entrance examinations, from which certificates are not to be considered (see report for 1889-90, p. 38), and those whose courses are sufficiently comprehensive and are pursued without reference to the limited range of subjects which some special institution may include among its entrance requirements. It may soon seem both expedient and right to extend the certificate privilege to the best among the latter class, as some of them are as thoroughly equipped as any of our secondary schools.

II. ADMISSION TO ADVANCED STANDING.

The number of students admitted to advanced standing as candidates for the first degree during the past ten years is, as nearly as may be ascertained, as follows:

YEAR	No. of Colleges	No. of Cases	Fresh.	Soph.	Jun.	Sen.	Arts.	Phil.	Lett.	Sci.	Chem. (discontinued)	Agr.	Arch.	Civ. Eng.	Mech. Eng.	El. Eng.	Med. Pr.	Phar. (discontinued)	Opt.
1886–87	38	50	22	9	15	4	2	8	1	4	0	1	4	6	14	4	0	0	6
1887–88	26	37	9	13	8	7	6	4	1	1	0	0	0	11	8	2	0	0	4
1888-89	35	64	34	9	12	9	5	0	6	5	1	2	2	12	13	8	1	1	8
1889-90	38	50	17	13	13	7	4	5	6	3	0	2	1	2	14	11	0	0	2
1890–91	38	69	13	29	15	12	8	8	2	4	2	1	0	14	12	16	0	0	2
1891–92	50	90	21	25	22	22	7	9	2	5	0	2	2	10	24	28	0	0	1
1892–93	52	87	30	30	12	15	6	6	1	8	0	0	6	11	22	22	1	0	4
1893–94	59	94	31	39	21	7	5	6	5	8	0	0	6	6	24	32	1	0	5
1894–95	53	71	21	24	13	13	4	2	3	3	0	2	3	6	22	22	0	0	4
1895-96	56	85	25	27	17	16	5	11	4	7	0	3	3	9	16	17	0	0	10
1886–96	176 (Different Institutions)	701	223	218	148	112	52	59	31	48	3	13	27	87	169	162	3	1	46

The distribution of students among the institutions from which such applicants have come is indicated in the following table :

Acadia	2
Adelbert	1
Alabama	2
Alabama Polytechnic Inst.	1
Alfred	1
Allegheny	3
Amherst	1
Arizona	1
Astrachousky	1
Baltimore City	1
Baylor	1
Beloit	2
Berlin, Koenigl. Tech. Hoch-Sch.	2
Brooklyn Polytechnic	7
Brown	7
Bryn Mawr	1
Buchtel	5
Bucknell	3
California	3
Canisius	1
Carleton	1
Case	13
Centenary	1
Charleston	1
Chicago	5
Cincinnati	6
Claflin	1
Coe	2
Colgate	1
College City of N. Y.	2
Colorado Coll.	1
Colorado Univ.	1
Columbia	14
Columbian	1
Dakota	1
Dalhousie	3
Dartmouth	1
De la Salle Inst.	1
Denison	1
DePauw	6
Deseret	1
De Veaux	2
Dickinson	3
Duquesne	1
Earlham	1
Freiburg	1
Furman	1
Grove City	2
Georgetown	5
Georgia	4
Granville Female	1
Granville Technology	1
Hamilton	2
Hampton Sydney	2
Hampton	1
Harvard	7
Harvard Annex	2
Haverford	2
Hillsdale	4
Hiram	2
Hobart	5
Holy Cross	1
Illinois	11
Illinois State Normal	1
Indiana	8
Iowa Agr.	10
Iowa Coll.	3
Iowa State Univ.	4
Johns Hopkins	3
Kansas State	2
Kenyon	3
Kentucky Wesleyan	1
Knox	8
Lafayette	6
Lake Forest	4
Lebanon Valley	1
Lehigh	35
Lima (South America)	1
Louisiana State	2
Maine State	2
Marietta	1
Marquette	1
Massachusetts Agr.	7
Massachusetts Inst. of Tech.	14
Macallister	1
McGill	3
Miami	1
Michigan	16
Michigan Agr.	19
Michigan Mining School	1
Minnesota	5
Missouri Sch. of Mines	1
Mount Allison	1
Mount Holyoke	1
Mount Union	1
Nebraska	2
New Brunswick	1
New York City Normal	2
New York, Coll. of the City of	30
New York Coll. of Pharmacy	1
New York, Univ. of	1
North Carolina	2
North Carolina Agr.	2
Northwestern	5
Notre Dame	2
Oberlin	15
Ohio	1
Ohio State	20
Ohio Normal	3
Ohio Wesleyan	8
Olivet	3
Oregon	1

Pennsylvania Military Coll,	6	U. S. Grant Univ.	1
Pennsylvania State	11	University of Washington	1
Pennsylvania Univ.	9	Upper Iowa	2
Pennsylvania, Western Univ.	3	Utah	2
Princeton	2	Vanderbilt	2
Purdue	8	Vassar	1
Radcliffe	1	Victoria	1
Rensselaer, Poly. Inst.	9	Vincennes	1
Reykjavik (Iceland)	1	Virginia Agr. and Mech.	1
Richmond	3	Virginia Mil. Inst.	3
Ripon	1	Virginia Univ.	1
Rochester	6	Wabash	1
Rose Poly. Inst.	6	Washington and Jefferson	2
Rutgers	4	Washington and Lee	1
St. John's, (Baltimore)	2	Washington Coll.	2
St. Lawrence	1	Washington Univ.	13
St. Louis (Costa Rica)	1	Waynesburg	1
St. Petersburg	4	Wellesley	8
Senmon Gakko (Tokio, Japan)	1	Wells	1
South Carolina	4	Wesleyan	3
Stanford	9	Western Maryland	2
Stevens Inst. of Tech.	30	Western Normal	1
Swarthmore	14	West Virginia Univ.	1
Syracuse	8	Wheaton	1
Tennessee	1	Wilmington	1
Texas	2	Williams	5
Toronto	1	Wisconsin	14
Trinity, Conn.	1	Wittenburg	2
Trinity, N. C.	1	Wooster	18
Tulane	4	Worcester Poly. Inst.	10
Union	4	Yale	12
Union (Tokio, Japan)	1	Yale (Sheffield)	1
U. S. Military Academy	5		

In the above list should properly be included a number of cases of special students who, coming from other colleges, would have been eligible for admission as optional students also. Such students however often prefer to be under the special direction of some one professor with whom they desire to study, rather than be classed among optional students who are without sponsorship.

The method of dealing with cases of admission to advanced standing has been already described (See Report for 1890–91, pp. 51–52). The desirability of permitting a somewhat greater elasticity of substitution in required work and the progress made in this direction have been indicated in previous reports (1890–91, p. 52; 1891–92, p. 3, Appendix I; 1892–93, p. 65; 1894–95, p. 78). The extension of the elective system, which comes into effect in and after 1897, will greatly facilitate the passage from other institutions to Cornell by reducing to a minimum the specific subjects required here for the bachelor's degree. Ambitious students who are attracted to Cornell from other institutions on account of the larger advantages afforded, will now be able to make the change and devote themselves to special fields unhampered by arrears of required work, which have often been made up in a perfunctory manner; and this amelioration of the terms of their admission will be accomplished without any lowering of the standard of scholarship.

III. ON EXTRA HOURS AND CHANGES IN REGISTRATION.

The jurisdiction of this committee now includes cases of substitutions for required work and the decision in cases of petitions for permission to graduate in less than four years. With the present opportunity for securing credit for work in the summer school which is now accorded, any good student who has passed up a few hours at entrance and takes the margin of extra hours permitted, could readily graduate in three years by attending the sessions of two summer schools. The tendency among able students to accomplish this is therefore increasing, as well as the tendency to take a leave of absence for the last term or two of the senior year, when the candidate for graduation has already met the requirements. Both tendencies are detrimental to good scholarship, inducing haste in work and a desire to satisfy merely the pass marks, while the later terms of the course are lost at a time when the increased maturity of the candidates would permit them to secure the greatest profit from taking continuous work. Sound advice to students in the earlier years of their work would check this evil better than later prohibitions.

Another difficulty is found in the tendency of seniors who have made the required number of hours before the completion of the senior year to drop off from their work at the end of the year, to take a small number of hours in the spring term, and to neglect the final examinations. No effective remedy for these practices, demoralizing alike to the students concerned and the tone of the work in the class room, has hitherto been suggested.

IV. ON DOUBTFUL CASES.

The Faculty acting through the committee on doubtful cases, temporarily removed from the University at the end of the fall term 36 students for deficiency in scholarship and warned or referred 47 others ; at the end of the winter term 29 were removed and 52 other cases were warned or referred : at the end of the spring term 10 were removed and 74 others warned or referred. During the past ten years the number of students thus temporarily removed is as follows :

	'86-7	'87-8	'88-9	'89-90	'90-1	'91-2	'92-3	'93-4	'94-5	'95-6
Fall	30	31	35	26	12	39	40	27	36	36
Winter	20	7	15	23	18	13	34	44	20	29
Spring	24	17	16	20	14	21	24	57	18	10
	74	55	66	69	44	73	98	128	74	75

The policy of the committee in dealing with students deficient in their work at the end of the spring term has already produced beneficial results (See Report for 1894-5, pp. 67-68.) In many of these cases the student has made good his deficiencies within the time appointed and has regained the ground lost. The same policy has been followed and extended during the present year, which accounts for the apparent increase in the number of students named or referred.

V. ON DRILL AND GYMNASIUM.

The rules governing drill and gymnastics have been administered during the present year in accordance with the usual precedents. By a recent vote of the Faculty (May, 1896,) all students not taking the prescribed drill and gymnastics are required to present an equivalent in hours, to be added to the 180 hours required for graduation. In other words these subjects are put upon the same basis as any other required work, as of equal dignity and importance. This action, it is believed, will reduce the desire to avoid the specific performance of these beneficial requirements.

VI. ON LEAVES OF ABSENCE.

The Dean has been authorized to grant leaves of absence from town for satisfactory reasons, except in cases of absence extending over term examinations. Since 1893, excuses for absence on account of illness have been recommended by the Professor of Physical Culture, to whom doctors' certificates are to be submitted for his endorsement; and this item has accordingly been omitted from the appended analysis. All other excuses for absence are to be presented to the heads of the departments concerned. By a vote of the Faculty, passed December 12th, 1885, the keeping of a record of absences is to be left to the discretion of the heads of departments. During the past eight years leaves of absence have been granted as follows:

	1888-89	'89-90	'90-91	'91-92	'92-93	'93-94	'94-95	'95-96
	Cases.	Cases.	Cases.	Cases.	Cases.	Cases.	Cases.	Cases.
Personal illness	148	25	37	35	53	17	--	--
Illness in family	34	45	36	53	65	55	50	52
Weddings	16	19	21	23	19	18	30	16
Business summons	43	38	48	37	51	72	51	54
Del. to conventions	29	38	59	49	36	40	42	51
Athletic teams, etc.	--	58	54	102	95	97	80	54
Voters	129	7	16	55	150	26	60	19
Miscellaneous	81	43	43	71	102	96	83	48
Total	480	173	314	425	571	421	396	294

The slight variations in the different classes of absences indicate that the regularity of attendance remains on the whole unchanged from year to year. The occasion of many of these fluctuations has been indicated in previous reports. (1891-92, p. 5 of Appendix I; 1892-93, p. 68; 1894-95, pp. 80-81).

The Dean has also been authorized to grant permission to register to students who arrive after Registration Day. Of such cases, in which excuses more or less valid were presented, and in the majority of which the delay occasioned was not more than two or three days, there were during the past six years the following numbers:

	1890-91	'91-92	'92-93	'93-94	'94-95	'95-96
Fall	31	35	39	41	26	38
Winter	106	70	185	107	171	239
Spring	63	56	164	156	93	161
Total	200	161	388	304	290	438

VII. RECORDS OF CANDIDATES FOR GRADUATION.

The committee on records of candidates for graduation reported favorably each year on the following numbers of candidates, who were afterwards recommended by the Faculty and received degrees at Commencement. The numbers graduated during the past eleven years, not including graduates in the School of Law, are indicated in the appended table:

	1886	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	Total
Arts	7	8	14	11	20	23	35	39	26	29	31	243
Phil.	13	17	15	18	13	17	26	26	24	25	43	237
Science	32	8	8	13	18	14	23	26	21	24	23	194
Letters	32	18	27	19	39	31	31	31	13	19	12	256
Chem.	--	1	2	1	2	3	--	--	0	--	--	9
Agric.	1	--	7	6	7	11	8	3	4	4	5	56
Arch.	6	4	11	6	16	8	6	8	13	18	19	118
Civ. Eng.	10	17	20	14	15	24	30	25	25	29	23	232
El. Eng.	3	7	8	20	28	29	44	46	43	51	69	407
Mech. Eng.	5	12	14	12	26	24	40	48	38	36	40	295
Lit.	1	--	--	--	--	--	--	--	--	--	--	1
Nat. Hist.	4	--	1	--	--	2	--	--	--	--	--	7
Total	82	92	127	120	187	185	243	252	207	235	265	2055

The discontinuance of the Course in Letters, the last degrees in which are to be conferred in 1899, is probably the chief reason for the falling off in registration in this course as compared with the other general courses.

VIII. ON GRADUATE WORK AND ADVANCED DEGREES.

The method of procedure which this committee has established is described in the report for 1892-93, pp. 69-71.

The candidates for advanced degrees during 1892-95, were distributed as follows:

I. By degrees:

	1892-93	1893-94	1894-95	1895-96
A. M.	9	15	3	3
Ph. M.	2	6	3	6
M. L.	8	12	7	4
M. S.	33	23	13	15
M. C. E.	7	18	13	5
M. M. E.	31	48	36	18
Ph. D.	58	77	67	58
D. Sc.	19	31	31	22
Total	167	230	174	131

II. **By subject (each minor counted separately):**

SUBJECT	MAJOR '92-3	MAJOR '93-4	MAJOR '94-5	MAJOR '95-6	MINOR '92-3	MINOR '93-4	MINOR '94-5	MINOR '95-6
Classical Archæology and History of Art	1	1	0	1	1	3	4	1
Comparative Philology	3	2	3	0	8	15	11	7
Greek	3	6	4	1	3	3	4	7
Latin	1	3	3	4	3	9	5	3
The Germanic Languages	3	3	4	4	1	3	3	5
The Romance Languages	1	4	2	3	2	2	3	6
English	9	22	12	11	11	24	10	12
Philosophy	18	23	20	20	32	38	35	37
History and Polit. Science	19	22	20	16	37	54	45	28
Mathemat. and Astronomy	9	13	5	4	20	31	27	16
Physics	16	20	15	9	16	35	31	20
Chemistry	15	22	16	11	24	21	13	11
Botany and Arboriculture	5	2	6	6	13	11	12	14
Entomology and General Invertebrate Zoölogy	6	5	2	1	5	6	8	3
Physiology and Vertebrate Zoölogy	7	7	4	1	9	10	7	3
Geology, Paleontology, and Mineralogy	2	2	2	2	2	6	5	8
Agriculture	3	0	0	4	3	1	0	2
Horticulture	5	3	1	4	2	0	0	1
Architecture	1	1	1	1	2	0	0	0
Civil Engineering	7	20	16	8	8	20	18	10
Mechanical Engineering	33	49	38	20	34	44	31	19

During the past nine years 712 graduates of one hundred and thirty-nine institutions have been admitted to graduate work, distributed as indicated in the following table :

Acadia	5
Adelbert	1
Albion	1
Alfred	2
Allegheny	2
Amherst	4
Anatolia	1
Arkansas	1
Bates	1
Beloit	2
Boston	4
Bowdoin	1
Brooklyn Poly.	1
Brown	9
Buchtel	5
Bucknell	2
California	3
Campbell	1
Capitol	1
Carleton	2
Chaddock	1
Cincinnati	1
Colgate	1
Colo., Univ. of	1
Colo. Sch. of Mines	1
Columbia	1
Columbia Sch. of Mines	1
Columbia Sch. of Law	1
Cornell College	1
Cornell University	300
Dalhousie	13
Davidson	2
Dennison	1
DePauw	11

Earlham	4
Elmira	2
Erlangen	1
Franklin	3
Ghent, State Univ. of	1
Hannover, Tech. Hochschule	1
Hamilton	3
Harvard	3
Harvard Annex	1
Harvard (Lawrence Scientific)	1
Haverford	1
Hillsdale	2
Illinois	6
Illinois Wesleyan	1
Indiana	18
Iowa Agr.	5
Iowa Coll.	3
Iowa State	2
Japan Imperial Univ.	1
Johns Hopkins	3
Kansas Agr.	2
Kansas State Univ.	5
Knox	5
Lafayette	1
Lake Forest	1
Lawrence	1
Lehigh	5
Lombard	1
London	1
Luther	3
McGill	3
McKendree	1
Maine Agr.	4
Manitoba	7
Mason Coll. (Birmingham)	1
Massachusetts Agr.	3
Massachusetts Inst. of Tech.	4
Michigan Agr.	3
Michigan Univ.	10
Milton	1
Minnesota	9
Mt. Holyoke	1
Mt. Union	1
Napa	1
Nashville	1
Nebraska	4
Newberry	1
Newcomb	1
New Hampshire Agr.	1
New York, Coll. of the City of	5
North Carolina	2
Northwestern Univ.	2
Notre Dame	1
Oberlin	6
Ohio State	3
Ohio Univ.	2
Ottawa	1
Otterbein	1
Oxford	1
Pacific Univ.	1
Pennsylvania State	1
Penn. Univ.	1
Penn. Western Univ.	1
Pine Hill Theo. Sem.	1
Princeton	4
Purdue	9
Queen's Univ. (Kingston, Can.)	2
Rensselaer Poly.	1
Rochester	4
Rose	3
Rutgers	2
St. Andrews (Scotland)	1
St. Petersburg	1
Smith	18
South Carolina	2
South Dakota Agr.	2
Southern California	2
St. Olaf	1
Stanford	7
Stevens Inst.	2
Strassburg (Germany)	1
Swarthmore	2
Sidney Univ. (New So. Wales)	2
Syracuse	9
Texas	3
Texas Agr.	2
Tokio Univ.	1
Toronto	6
Trinity Coll. (Toronto)	1
Tulane	1
U. S. Naval Academy	3
Vassar	12
Vermont	1
Victoria	1
Virginia	4
Virginia Agr. and Mech. Coll.	2
Wabash	1
Washington University	1
Wellesley	7
Wells	1
Wesleyan	3
Westminster	2
Wheaton	2
Williams	3
Wisconsin	1
Wittenberg	1
Wooster	2
Worcester Poly.	3
Yale	11
Yale Theological Sem.	1
Yale (Sheffield)	3

Graduate students who are not candidates for a degree, as well as those who are, have been required to work under the direction of a special committee of the Faculty. The numbers of such students during the years 1889-95 are as follows:

1889-90	1890-91	1891-92	1892-93	1893-94	1894-95	1895-96
6	2	2	4	1	11	14

The variation in the above figures was explained in the Report for 1894-95, p. 4.

As a result of the recent legislation establishing a single bachelor's degree (A.B.) for those entering the non-technical courses in and after 1897, the committee was requested to consider and report any changes which might seem necessary in the regulations for the master's and doctor's degrees. The committee was not prepared to report at the end of the present academic year, and requested more time for correspondence with other institutions before presenting its final recommendations.

The action taken by the Faculty during the present year with reference to the practice of conferring certain master's degrees *in absentia* (See Report for 1894-95, p. 85,) was supplemented in October, 1895, by the following vote:

"*Resolved:* That residence at the University be required for all degrees, except that in special cases graduates of this University, on the recommendation of the special committee who would have charge of their work, may by vote of the Faculty in each case become candidates for the degrees of M.C.E., M.M.E., and M.S. in Agriculture after two years of professional practice and study *in absentia*." As one year's tuition in advance is also to be charged in such cases, it is probable that the number of candidates will diminish, while the character of these degrees will be preserved from any deterioration.

The advanced degrees conferred during the past eleven years are indicated in the following table:

Advanced degrees conferred 1886-96:

	1886	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	Total
A.M.	3	1	3	1	8	6	6	4	8	2	1	43
Ph.M.	--	--	--	--	--	--	2	0	3	1	3	9
M.L.	--	--	--	--	--	--	1	3	2	3	0	9
M.S.	3	3	3	6	7	7	7	6	10	7	12	71
M.C.E.	1	--	1	--	1	2	--	2	8	4	0	19
M.M.E.	1	--	2	1	6	3	6	14	16	8	15	72
Ph.D.	1	--	3	1	2	3	8	4	16	13	14	65
D.Sc.	2	--	--	--	--	--	--	2	3	6	3	16
Total	11	4	12	9	24	21	30	35	66	44	48	304

IX. LAW CONFERENCE CASES.

The functions of this committee are described in the Report for 1894-95, p. 86. The numbers of students in other departments of the University availing themselves of the privilege of taking courses in the Law School have been as follows:

1891-92	1892-93	1893-94	1894-95	1895-96
29	28	27	35	48

X. ON FACULTY LEGISLATION.

Since October, 1890, the Dean has supervised the selection of extracts from the Faculty minutes, which have been printed from term to term. At the close of the present academic year, which marks the conclusion of the labors of the General Faculty, an index to these reprints was prepared and distributed with the last selections printed. These reprints, taken in connection with the codification and index of the proceedings of the Faculty from 1868 to 1890, prepared by the same official (See Report 1893-94, pp. 80-81), form a fairly complete record of the more important proceedings and legislation of the General Faculty during the whole period of its existence.

The legislation accomplished during 1895-96 by the Faculty, and by the Trustees for the Faculty, includes some exceedingly important measures.

During the winter a conference invited by President Low of Columbia University, and composed of delegates from Columbia, Cornell, Harvard, Pennsylvania, Princeton and Yale Universities, and from various secondary schools in the eastern and middle states, met and adopted uniform entrance requirements in Greek, Latin, French, German, History and Mathematics. These uniform entrance requirements, substantially the same as the present requirements at Cornell, with the exception of slight changes in History and Mathematics, were adopted by the Faculty to go into effect in 1897, except the requirement in History, which goes into effect in 1898.

In November, 1895, the Faculty repealed the action taken in March, 1894, (See President's Report for 1893-94, pp. 30-36, and Reprints, pp. 30-31) as far as the limitation on elective work during the junior and senior years in the general courses was concerned.

In May, 1896, the Faculty adopted a series of resolutions which were the culmination of discussions extending over the two years preceding. This action established three groups of specific entrance requirements corresponding to the entrance requirements already established in the courses in Arts, Philosophy and Science for 1897.

Military Drill, Gymnasium and a Thesis were to be required for the baccalaureate degree as heretofore, but in all other respects students were to have freedom of election under the limitations to be prescribed by each department. It was also resolved that the single degree of Bachelor of Arts be conferred irrespective of the subjects elected. This legislation was to go into effect with the class entering in 1897, and the first degrees under this new system would therefore be conferred in the year 1901. It was further resolved that an official list should be prepared of the courses of study open to election by freshmen.

Entrance requirements for the College of Civil Engineering were made to conform with the entrance requirements in the other technical colleges, beginning with the year 1898. The entrance requirements for the course in Agriculture were made the same as the entrance requirements for the course in Science already established for the year 1897, this change to take place in 1898.

Taken with the action of the School of Law, which established the same requirements for that school as for the general courses, beginning with the year 1898, the result of this legislation is that all the entrance requirements to the various courses in the University are practically based upon the same amount of preparation. The Medical Preparatory course may seem at present an exception, but the committee to which the matter of entrance requirements in this course was referred, has already prepared a report recommending that a similar increase in the requirements to that course be made. The apparent difference between the entrance requirements for the technical colleges and for the general courses is fully made up by the additional amount of work required for graduation in the technical courses.

In reference to the University Scholarship examinations, the Faculty voted that it was inexpedient to admit to such examinations any one who had not completed the *specific* entrance requirements to his course. As regards the modern language requirements for these examinations. it was voted that they should be based upon the elementary entrance requirements in these subjects.

During the past year, for the first time credit in University hours was authorized for certain courses in music controlled by the Executive Committee of the Choral Union, the committee being composed chiefly of members of the General Faculty.

A resolution to alter the present marking system was tabled.

English was adopted as the language to be employed in all diplomas and in the conferring of all degrees.

The usual rules for commencement stage orations were suspended, and in accordance with the suggestion of the Faculty an address was delivered by the President.

The action taken with reference to degrees *in absentia* has been indicated above (See page XVII).

The amount of credit to be received for courses taken in the summer school was extended from 8 to 10 hours of University work.

As the result of a joint conference between committees from the Trustees and the Faculties of the University, a re-organization of the Faculties of the University was made by the Board of Trustees, in virtue of which the existing General Faculty was dissolved and its constituents and functions were distributed among a number of newly created faculties, including, first, a General Faculty designated as the University Faculty, having in charge the Graduate Department, and, further, a number of special faculties designated as the Faculties respectively of Arts and Sciences, Law, Civil Engineering, Mechanical Engineering, Architecture, Agriculture, and Veterinary Medicine.

Respectfully submitted,
HORATIO S. WHITE,
Dean of the General Faculty.

APPENDIX III.

REPORT OF THE DIRECTOR OF THE COLLEGE OF LAW FOR 1895-96.

To the President of the University:

It is a satisfaction to be able to report that more than its usual prosperity has attended the Law School during the year approaching its close. The whole number of students has reached two hundred and fifty-two, or twenty-six more than the highest number ever before registered on our rolls. Of these there were seventy-eight seniors, one hundred and nineteen juniors, eleven post-graduates and forty-four from the general courses of the University. Of the whole number in attendance, one hundred and sixty-eight were from New York, thirteen from Ohio, twelve from Illinois, eleven from Pennsylvania, eight from Utah, seven from California, four from New Jersey, five from Wisconsin, three each from Massachusetts, Missouri, Michigan and the District of Columbia, two each from Indiana and Georgia, and one each from Vermont, Connecticut, Kentucky, Colorado, Iowa. Delaware, Florida and Canada. The wide extent of territory from which our students come, justifies the effort we have made to supply the Library with the Statutes and Decisions of every State and to so broaden the instruction as to meet the needs of those who come to us from States other than our own.

Graduate scholarships were awarded this year to Howard Cobb of Ithaca, N. Y.; Michael Francis McNamara of Buena Vista, N. Y.: Theophilus John Moll of Evansville, Ind.; and Edward J. Mone of Ithaca N. Y. These, with Benjamin Levy appointed last spring, are the five graduate scholars for the current year.

The summer school conducted last year contained forty-three students, of whom seventeen were from New York, three from Illinois, two each from Texas, Ohio, Maryland, Kentucky and Pennsylvania, and one each from New Hampshire, Massachusetts, Georgia, Virginia, Vermont, Colorado, Maine, New Jersey, Indiana, Canada and Japan. Of these twenty-five were graduates of Universities or Colleges and several were practicing attorneys.

Changes to some extent have been made in the requirements for admission. Students may now enter at the age of eighteen instead of nineteen as heretofore. On and after the school year of 1898 the qualifications for admission will be those requisite for admission to the University in the course in Arts, Philosophy or Science. Following the requirement of a three years course which takes effect in 1897, this will rank the school as to entrance requirements and curriculum among the first three Law Schools of the country. The standard of acquirement should not be less than that, and with the ample notice of the change, which the delay permits, it should disappoint none. Meantime we shall require two years of Latin instead of one and have specified more carefully the permitted equivalents. Experience more and more impresses upon us the wisdom of requiring a full preparation for the work of the School.

During the year Professors Pound and Hardon who were appointed at its commencement have steadily devoted themselves to their duties, and, since the first of January, the Dean has taken up the work of instruction giving his whole time to the work of the School. Professor Hardon accepted an appointment to the Law School of Columbia and added another illustration to the impolicy of maintaining in this department a scale of salaries which prevents anything like permanance in the instructing body. A reasonable addition to the salaries of the professors would very much lessen and perhaps substantially end the difficulty from which the school has suffered, of selecting with great labor and pains suitable instructors only to have them tempted away by larger compensation, or better business opportunities. It is very discouraging to see our Faculty become a reservoir from which other institutions habitually draw, inflicting upon us the evils consequent upon re-arrangements of the courses, and some misinterpretation on the part of the public of the occasion of such repeated changes. Unless a Law School can pay to its professors the fair average of what they could reasonably expect if they devoted themselves to active practice, and about what other schools of character and reputation are accustomed to pay, we shall always work at a disadvantage. This is the most pressing and important necessity to which attention should be given.

The work done by Professor Pound has been satisfactory in every respect. To great industry and faithful study he has added a happy faculty of imparting instruction and of interesting the classes under his charge. With the acquired experience of the year I expect to see him next year add to the success he has attained. Our regret at the departure of Professor Hardon I have already indicated. His place has been supplied by the appointment of Professor E. H. Woodruff, who comes to us from the Leland Stanford University, and brings with him experience as an instructor, together with an industry and ability from which I anticipate very successful results. We shall have then an ambitious, harmonious and hard working Faculty which I hope we may be able to make permanent.

During the year we have been presented by Mr. Edward G. Wyckoff with a Remington type-writer of the new and improved model, and a roll-top desk. Its use in the Secretary's office adds largely to the facilities for its daily work, and entitles the donor to the thanks of the Faculty.

Other gifts are referred to in the report of the Librarian presented herewith, and to which I refer also for its recommendations as to the purchase of books and of magazines, and its statements of the additions made to the Library. The usual appropriation of three thousand dollars barely enables us to keep up the reports and purchase such text-books as are necessary, leaving nothing to fill up wants which flow from the wearing out of volumes, or with which to avail ourselves of frequent opportunities for the purchase of rare and scarce books, which we very much need, but which can only be obtained on sudden occasions. I should be very glad if an additional sum of five hundred dollars could be appropriated for the use of the Library. Some portion of that amount will be needed to bind the cases and briefs of the Court of Appeals which are fast accumulating through the courtesy of the Judges of that court. Unless bound they are of little benefit and I should feel it necessary, though with some reluctance, to abandon the effort I have made to secure them for our use. The opportunity to examine and study the actual briefs used in that court is one which may be made of great utility to the industrious student, They furnish examples to be imitated and sometimes warnings to be remembered.

F. M. FINCH,
Director.

APPENDIX IV.

REPORT OF THE LIBRARIAN.

To the President of the University:

SIR :—I have the honor to submit herewith the annual report on the University Library for the year 1895–96.

The year has been one of normal and steady growth, unmarked by any extraordinary event. The following table gives the additions for the year ending July 31st, and the total present extent of the Library :

	ADDITIONS, 1895–96		PRESENT EXTENT	
	Volumes	Pamphlets	Volumes	Pamphlets
General Library	12,023	1,200	162,413	30,400
Law Library	867	----------	24,270	----------
Totals	12,890	1,200	186,683	30,400

Of the 12,023 volumes added to the General Library, 3,565 volumes were received as gifts, and 114 volumes were additions to the seminary libraries. The aggregate number of volumes now contained in the seven seminary libraries is 2,600, and this number is included in the estimate of the General Library given above.

The largest gift of the year consists of the additions made by Willard Fiske to the Dante and Rhaeto-Romanic collections, aggregating over 1,300 volumes. Ex-President White has presented some 300 volumes to the White Historical Library. Over 300 volumes have been presented by Theodore Stanton, including a set of the "English Library", founded by the late C. W. Balestier, of the class of 1885. Professor T. F. Crane has presented to the library his collection of rare and valuable works on French and Italian Society in the sixteenth and seventeenth centuries, numbering 228 volumes. Through the kindness of J. G. Bourinot, the library has received from the Royal Society of Canada a complete set of its Transactions. From the national and state governments the usual supply of current public documents has been received, and the British and Canadian Patent Offices continue to present to the library their valuable publications. For the numerous minor gifts received due acknowledgment has been made to their respective donors.

The purchases from the income of the Sage Endowment Fund include a valuable collection of books on South America, formed by Herbert H. Smith, of the class of 1872, during a residence of eight years in Brazil; the collection numbers about 800 volumns and 700 pamphlets. Among the important purchases of the year may be noted complete sets of the Bampton Lectures (1780–1894), the Huth Library of Elizabethan literature, the Fuller Worthies' Library, Archaeologia, Barrande's Système Silurien, Wilkins's Concilia, the publications of the Archaeological Institute of Great Britain, the Maatschappij der Nederlandsche Letterkunde, the Pipe Roll Society, the Scottish History Society, the Société Entomologique de France, and a large number of sets of literary and scientific periodicals, such 'as the Journal des Savants, Flora, Jahrbuch für Gesetzgebung, United Service Journal, Zeitschrift für die Gesamte Staatswissenschaft, Zeitschrift für Krystallographie, Zeitschrift für Mathematik and Physik, the three leading German gymnasial periodicals, and several English eighteenth century magazines, such as the London Magazine (1732–1785), the Monthly Review (1747–1782), the Universal Magazine (1747–1800).

Dr. A. C. White, Assistant Librarian in charge of classification, and Miss Fowler, in charge of the catalogue, report that the work of classifying and cataloguing the books added to the Library has been carried on with promptness and regularity, and that satisfactory progress has been made on the Zarncke collection. The bound volumes of the collection have all been classified and catalogued, and Miss Runner is now engaged on the task of arranging the pamphlets for binding and cataloguing. For the revision and annotation of the catalogue of the Dante collection we were enabled, in December, to secure the services of T. W. Koch, through the generosity of Mr. Fiske who undertook to pay half the salary of Mr. Koch, a Dante scholar who came to us highly recommended by Professor C. E. Norton. The large additions made to the collection, during the year, by Mr. Fiske have necessarily delayed the completion of the catalogue beyond the time calculated, but have greatly enhanced the value and importance of the collection. It is estimated that, when printed, the catalogue will form a volume of at least three hundred pages, and it is hoped to issue it before the close of the current year.

In the absence of Professor Burr, the Librarian of the White Library, I have only to report that Mr. Babine has had charge of the General Finding List of the collection, which is now passing through the press and will be issued early in the autumn.

Mr. W. H. Austin, Assistant Librarian in charge of the Reference Library, reports that the Library has been open 310 days and 166 evenings, and gives the following statistics of the recorded use of the Library during the year 1895-96.

REFERENCE LIBRARY AND READING ROOM.

No. of volumes placed permanently on the shelves	102
No. of volumes placed temporarily for special work	109
No. of volumes given out at delivery desk for use in the room	73,359

SEMINARY COLLECTIONS.

No. of volumes deposited in the several rooms	826
No. of volumes sent to the rooms for special work	2,004

DEPARTMENT COLLECTIONS.

No. of volumes deposited in the several buildings	882

CIRCULATION.

No. of volumes drawn by University officers	12,458
No. of volumes drawn by students for home use	2,273
No. of volumes drawn from reference library (24 hour rule)	435
No. of volumes drawn from seminary rooms (one week rule)	122
Total recorded use	92,570

Eight hundred and twenty-six volumes have been added to the collections from the general library deposited in the seminary rooms, and 155 volumes have been withdrawn and returned to the general library, making a net addition of 671 volumes to these collections, and the total number on deposit in the seminary rooms is now 5,143. The number of volumes from the general library deposited in the various departments during the year, was 882, the number withdrawn 9, leaving a net addition of 873 volumes, and making the total number of volumes from the general library deposited in the departments 6,491. I may here remark that the policy of removing from the fireproof library building important and costly sets, which could with difficulty be replaced, and depositing them in buildings where they are necessarily exposed to many risks, is open to serious question, and it would seem the part of wisdom to restrict these collections to books of every-day use and those which can be easily replaced in case of loss.

In the Periodical room the current numbers of over five hundred periodicals are kept on file, and open to the inspection and use of readers without restriction.

The number of cards of admission to the stacks, by which students engaged in special work, are granted access to designated divisions of the stack rooms for the consultation of books at the shelves, shows a decided increase this year, as may be seen from the following table, giving the numbers issued for the last five years:

SUBJECTS.	1891-2	1892-3	1893-4	1894-5	1895-6
History and Political Science	56	40	43	31	44
Literature and Philology	10	21	22	21	19
Philosophy and Education	23	18	10	8	22
Science and Technology	81	78	86	60	87
Totals	151	157	161	120	172

Coincident with this increase in the number of students admitted to the shelves, the annual inspection, now being made, reveals a large increase in the number of books misplaced in the stacks. Carelessness in handling books, however, is not confined to undergraduates, and as access to the shelves is necessarily given to all members of the instructing staff, the number of those who consult books at the shelves must always be comparatively large. All that can be done, under these conditions, is to impress upon every one admitted to the stacks the urgent need for constant care in returning the books to their proper places on the shelves according to the shelf marks, as a book misplaced is, for the time being, a book lost.

During the year forty-seven volumes have been borrowed from other libraries for the use of officers and students of this University, and twenty-one volumes have been lent to other libraries. Since my last report two numbers of the Library Bulletin have been issued, completing the third volume. For some time it has seemed doubtful if the usefulness of the Bulletin were sufficient to justify the labor and expense of preparing and issuing it, and, after careful consideration of the question by the Library Council, it was unanimously decided to discontinue its publication. Through your kindness the annual record of publications by University officers will henceforth be issued as a supplement to the Annual Report of the President. During the winter and spring terms I delivered, as usual, a course of lectures on Bibliography to a small class.

Respectfully submitted,

GEO. WM. HARRIS,

Librarian.

APPENDIX V.

TABLE SHOWING THE COURSES GIVEN, THE NAMES OF PROFESSORS AND INSTRUCTORS, THE NUMBER OF HOURS IN EACH COURSE, AND THE NUMBER OF STUDENTS ATTENDING EACH COURSE.

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
CLASSICAL ARCHÆOLOGY AND HISTORY OF ART.				
1. Classical Archæology. Associate Professor A. Emerson	2	---	1	1
4. History of Painting. Associate Professor A. Emerson	2	3	5	6
5. Studies in the Museum of Casts. Associate Professor A. Emerson	1	3	3	4
6. Archæological Seminary. Associate Professor A. Emerson	2	---	1	1
COMPARATIVE PHILOLOGY.				
3. Sanskrit. Associate Professor Bristol	2	4	3	3
7. Philological Seminary. Associate Professor Bristol. (See Greek 16.)	2	4	4	3
GREEK.				
A. Elementary Greek. Grammar, Composition, Xenophon, Plato. Dr. Forman	3	13	9	8
1. Freshman Course. Lysias, Homer, Plato. Associate Professor Bristol and Dr. Forman	3	45	42	42
2. Sophomore Course. Demosthenes, Sophocles, Aristophanes. Extra Reading, Theophrastus, Euripides, Aristophanes. Dr. Forman	3	41	35	33
2a. Supplementary Course. Xenophon, Herodotus, Lucian. Dr. Forman	2	4	2	2
3. Junior Course. Thucydides, Demosthenes, Aeschylus. Associate Professor Bristol	3	7	7	7
6. Elegiac and Lyric Poetry. Associate Professor A. Emerson	2	3	3	1
7. The Tragedy. The Agamemnon of Aeschylus, Ajax of Sophocles, Bacchanals of Euripides, and Poetics of Aristotle. Acting Professor Dyer,	3	---	3	2
11. Studies in Greek Literature and Religion. Acting Professor Dyer	2	7	6	5
12. Advanced Greek Composition. Dr. Forman	1	9	9	9
13. New Testament Greek. Dr. White	2	11	10	10
16. Philological Seminary. The Iliad of Homer. Special Problems in Greek Grammar. Associate Professor Bristol	2	4	4	3
17. Theses	---	---	---	7

	DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
			1st Term	2nd Term	3rd Term
	LATIN.				
1.	Freshman Course. Livy, Cicero, Horace, Latin Writing. Professor Bennett (one section), Acting Assistant Professor Johnston (one section), and Mr. Edmiston (two sections)	3	96	94	93
2.	Sophomore Course. Terence, Horace, Tacitus, Collateral Reading, Latin Writing, Wilkins' Primer of Roman Literature. Acting Assistant Professor Johnston (two sections), and Mr. Edmiston, (one section)	3	83	85	84
4.	Selections from Cicero's De Officiis and the Tusculan Disputations. Acting Assistant Professor Johnston	2	9	9	10
6.	The Literature and History of the Early Empire: Pliny the younger, Juvenal, and Tacitus. History of Roman Literature; Cape's Early Empire. Professor Bennett	3	24	25	23
7.	Advanced Course in Latin Writing. Acting Assistant Professor Johnston	1	11	10	7
9.	Private Life of the Romans. Professor Bennett	2	35	38	---
10.	Latin Seminary. Professor Bennett	2	5	4	3
11.	Study of the Italic Dialects. Professor Bennett	2	3	2	2
12.	Reading of easy Latin at sight. Nepos, Gellius, Ovid. Mr. Edmiston	1	22	19	18
14.	Teachers' Training Course	2	---	---	9
15.	Theses	2	5	5	5
	THE GERMANIC LANGUAGES.				
1.	Brandt's German Grammar and Reader. Harris's German Composition. Dr. Jones (four sections), and Dr. Rhoades (two sections)	3	162	129	113
2a.	Freytag's Soll und Haben, Maria Stuart, Minna von Barnhelm. Professor Hewett (two sections, fall and winter), and Professor White (one section, spring)	3	56	54	27
2b.	Freytag's Soll und Haben, Maria Stuart, Minna von Barnhelm. Dr. Rhodes (three sections)	3	84	78	89
3.	Advanced German Composition. Dr. Jones	1	21	14	14
4.	Goethe's Life and Works. Lectures, translations, and essays. Professor White	3	57	54	51
5.	Schiller's ballads and dramas, in connection with his life, and his theories of poetic and dramatic art as contained in his letters to Goethe and Körner. Professor Hewett (fall and winter)	3	19	16	11
6.	Old High German and Old Saxon. Selections from Otfrid's Evangelienbuch, Isidore, the Heliand, and other specimens of Old German. Dr. Jones	3	3	3	2
7a.	Lectures on the History of German Literature from the revival of Learning to Goethe's death. Professor Hewett (fall and winter)	2	4	3	---
7b.	German Seminary. Reading of selected texts in				

	DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
			1st Term	2nd Term	3rd Term
	Early Modern High German: Hans Sachs and the drama of the 17th century. Professor Hewett (fall and winter)	2	4	3	---
8.	History of German Literature from the earliest period. Lectures, readings, and lantern illustrations. Professor White	2	15	14	5
10.	German Seminary. Luther's writings, including an examination of his translation of the New Testament in different editions from 1522 to 1892, and a comparison with the pre-Lutheran, Catholic, and Swiss versions. Professor White,	2	7	7	6
11.	Theses. Professor White. Undergraduates	2	6	6	6
	Graduates	----	3	3	3
	THE ROMANCE LANGUAGES.				
1.	VanDaell, Introduction to the French Language. Rollin's French Reader. Crane's Tableaux de la Révolution Française. Mr. Lodeman (three sections), Mr. Vergauven (three sections), Mr. Segall (two sections), and Mr. Otto (one section, fall and winter)	3	219	182	189
2.	Mérimée's Colomba, with French Composition. Crane's Le Romantisme Française. Hugo's Ruy Blas. Mr. Lodeman (two sections), Mr. Segall (two sections), and Mr. Otto (two sections, fall and winter)	3	143	144	133
3.	Literature of the Seventeenth Century. Lectures and recommendations based on Bernardin's Morceaux choisis des classiques français du XVII^e^ siècle, with reading of plays by Corneille, Racine, and Molière. Professor Crane	3	42	42	41
4.	French Society in the Seventeenth Century with special reference to Maxims and the Moralists. Lectures and recitations based on Crane's La Société Française au XVII^e^ siècle, and selections from Pascal, La Rochefoucauld, and La Bruyère. Professor Crane	2	5	5	5
6.	Origin and development of the French language and literature down to the XVIIth century. Lectures. Professor Crane	1	9	9	9
7.	Novelists of the French Romantic school, Balzac, Mérimée, George Sand, etc. Recitations and lectures. Mr. Segall	2	20	20	20
8.	Romance Seminary, Phonetics, early French, Provençal, or Spanish texts, etc. Mr. Otto	2	3	3	---
9.	Modern French Prose Writers, based on Fontaine's Les Prosateurs Français du XIX^e^ siècle. Conducted entirely in French. Mr. Vergauven,	2	4	4	6
10.	French conversation and composition. Mr. Vergauven	2	11	9	7
11.	Readings from the French Classic Drama, Corneille, Racine, Molière, Voltaire, etc. Mr. Vergauven	1	12	11	11

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance 1st Term	 2nd Term	 3rd Term
12. Recent French Drama, Augier, Pailleron, Labiche, Sandeau, Feuillet, etc. Mr. Segall	1	17	14	14
13. Italian reading. Selections from Dante, Petrarch and Boccaccio, with lectures on early Italian literature. Professor Crane	2	1	1	1
14. Spanish reading. Selections from Cervantes, Calderon, and recent Spanish literature. Mr. Otto (fall and winter)	2	1	2	---
15. Italian grammar and reading. Professor Crane	2	10	9	9
16. Spanish grammar and reading. Mr. Otto (fall and winter)	2	9	6	---
17. Portuguese grammar and reading. Mr. Otto (fall and winter)	2	1	1	---
18. Thesis	2	4	4	4
ENGLISH.				
Rhetoric.				
1. Freshman Rhetoric. Hart's Handbook of English Composition, with readings in Macaulay, Carlyle, De Quincey. Essays and short papers throughout the year. The Instructors, Mr. Strunk and Mr. McKnight, besides each giving instruction eight hours weekly, read at least one short paper each week, and attend the lecture. The Readers, Mr. Andrews and Mr. Howe, have read four longer papers, two in the fall, one in the winter and one in the spring. Professor Hart gives one lecture weekly to the entire class	3	246	212	178
2. Sophomore Rhetoric. Critical reading of selections from the prose of Johnson, Goldsmith, Gibbon, Burke, with essays and short papers. (One lecture weekly to the class in two sections by Assistant Professor Emerson. Three recitations each are held by Mr. Northup and Mr. Sembower.)	2	150	148	146
3. Junior Rhetoric. Selections from the prose of Bacon, Milton, Dryden, Swift. Lectures upon the formation and growth of English prose, with collateral reading and essays. Assistant Professor O. F. Emerson	2	16	17	17
4. Senior Rhetoric. Teachers' Seminary. Professor Hart	3	13	15	15
Philology.				
6. Old English, introductory course. Assistant Professor O. F. Emerson	2	14	15	15
7. Early English Philology; Formation of the English Language. *a.* Fall, Gothic. *b.* Winter and spring, Old and Middle English. Professor Hart	3	9	8	7

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
8. Advanced English Philology. Reading of longer Early or Middle English texts, with investigation of dialectical peculiarities. Professor Hart	2	3	3	3
8a. Seminary in English Philology. Professor Hart,	2to8	3	3	3
9. Middle English Philology. Assistant Professor O. F. Emerson	2	4	4	---
10. History of the English Language. Assistant Professor O. F. Emerson	2	17	18	17
11. Phonetics. Sweet's Primer of Phonetics. Sweet's Primer of Spoken English. Assistant Professor O. F. Emerson	1	8	9	8
13. Icelandic. Winter. Noreen, Altisländische Grammatik; readings from the Elder Edda. Professor Hart	2	---	4	---
English Literature.				
15. Lectures on English Literature from Chaucer to Tennyson and Browning. Readings required in connection with the lectures. Professor Corson	5	54	57	56
17. Shakespearian Readings, including the thirty-seven plays. Professor Corson	2	63	78	106
18a. Seminary in English Literature: 19th century prose, not including novels. Professor Corson	2	4	4	4
19a. Seminary in English Literature: Novelists of the 19th century. Professor Corson	2	17	17	17
Elocution and Oratory.				
20. Elocution. Reading and speaking; instruction in breathing, management of the voice, gesture and general delivery; declamation in class and in public. Assistant Professor Lee (three sections), and Mr. Shurter (two sections)	3	115	116	104
21. Oratory. Lectures upon oral discourse and the structure of orations. Study and analysis of British and American masterpieces. Exercises in writing orations, speeches, and addresses. During the Winter Term, weekly public oratorical exercises. Fall and winter. Assistant Professor Lee	3	33	32	---
22. Extempore Speaking. Assistant Professor Lee	2	28	28	17
23. Thesis	2	1	1	1
PHILOSOPHY.				
1. General introduction to the study of Philosophy. Introductory Lecture and Ethics, President Schurman; The Philosophy of Religion, Professor C. M. Tyler; Modern Philosophy, Professor Creighton; Ancient Philosophy, Assistant				

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
Professor Hammond ; Psychology and Aesthetics, Professor Titchener	1	18	13	14
2. Physiology. Fall. Lectures, practicums and demonstrations. Professor Wilder	3	188	---	---
Psychology. Winter. Recitations, Dr. Albee (three sections) and Mr. Schiller (three sections). Lectures, Professor Titchener	3	---	163	---
Logic. Spring. Recitations, Dr. Albee (three sections), and Mr. Schiller (three sections). Lectures, Professor Creighton	3	---	---	149
3. Experimental Psychology. Lectures and laboratory work. Professor Titchener and Mr. Pillsbury	3	17	18	18
5. History of Philosophy. Lectures, prescribed reading, and occasional essays. Professor Creighton	3	14	14	12
6. Ethics. Lectures, discussions and text-book. President Schurman	2	29	30	---
7a. Comparative History of Religion. Lectures. Professor C. M. Tyler	1	14	12	13
7b. Primitive Religion. Lectures. Professor C. M. Tyler	1	14	12	13
8. The Institutes of Education. Professor Williams	3	18	17	16
9. The Politics of Aristotle, with an introductory survey of political theories among Aristotle's contemporaries. Assistant Professor Hammond,	1	3	3	3
10. The Dialogues of Plato: the Republic and Theaetetus in the original text. Readings and essays. Assistant Professor Hammond	3	2	2	2
11. Reading of Psychology in French, German or Italian. Professor Titchener	1	5	5	5
12. Rapid reading of German Philosophy. Mr. Schiller	1	4	2	---
13. Systematic Pyschology. Lectures, essays, and experimental illustrations. Fall. Professor Titchener	3	5	---	---
14. Visual Space-perception. Mr. Pillsbury	1	2	2	2
18. Mental Derangement. Spring. Dr. Wagner	1	---	---	20
21. Logical Theory. Reading, discussions, and essays. Professor Creighton	2	6	6	5
22. Leibniz, Hume and Kant. Recitations, discussions, and essays. Dr. Albee	3	10	9	8
23. Spinoza's Ethics. Recitations, discussions, and essays. Fall. Dr. Albee	3	4	---	---
24. Ethics (advanced). Types of Ethical Theory. Discussions and essays with occasional lectures. Dr. Albee	2	9	9	8
27. German Pessimism, with special reference to Schopenhauer and E. von Hartmann. Mr. Schiller	2	5	5	5
28. Modern Realism. Lotze's Metaphysics in connection with Leibniz and Herbart. Mr. Schiller	3	5	5	5

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
29. Recent Metaphysical Theories. Dr. Irons	1	6	5	5
30. Christian Ethics. Lectures. Professor C. M. Tyler,	1	2	2	7
31. Philosophy of Religion. Discussions, essays, and lectures. Professor C. M. Tyler	1	4	4	4
32. School Supervision. Professor Williams	1½	---	---	6
33. Pedagogical Conference. Professor Williams	1	1	2	6
34. History of Education. Professor Williams	2	3	3	2
35. Psychological Seminary. Professor Titchener	½to6	11	13	13
36. Seminary in Ancient and Mediæval Philosophy. Assistant Professor Hammond	1	4	4	4
37. Seminary in Modern Philosophy. Professor Creighton, Dr. Albee, and Mr. Schiller	2	8	8	8
39. Pedagogical Seminary. Professor Williams	2	2	2	2
MUSICAL COURSES.				
1. A course in voice production and vocalization, with elementary sight reading. Instruction and practice. Conducted by Mr. A. Howard Garrett of the Conservatory of Music, Precentor of the Sage Chapel	1	---	41	19
2. A course in anthem singing and hymnology. Instruction and practice. Conducted by Mr. William Grant Egbert, Director of the Conservatory of Music	1	20	27	26
HISTORY AND POLITICAL SCIENCE—I. HISTORY.				
A. Ancient and Mediæval History.				
1. Ancient Greece and Rome. Lectures and examinations. Fall, Greece. Winter and spring, Rome. Professor Burr. (Spring, Mr. H. J. Edmiston)	2	101	101	100
3. The Life of the Romans. See Latin 9. Professor Bennett	----	---	---	---
4. Europe during the middle ages. Lectures and discussions. Fall, The Rise of the New Rome (A. D. 300–800). Winter, The Feudal Era (800–1300). Professor Burr. Spring, Renaissance and reformation (1300–1600). Professor Morse Stephens	3	34	30	43
5a. Seminary in Mediæval History. Reading of Hincmar with a view to an acquaintance with mediæval life, and a familiarity with mediæval Latin. Fall. Professor Burr	2	4	---	---
5b. Paleography and Diplomatics. Winter. Professor Burr.	2	---	5	---
7. An Introduction to the study of History. a. History: its scope, its materials, its methods. b. The Sciences auxiliary to History. Professor Burr. c. Historical Geography. Professor Morse Stephens	1	13	12	15

	DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance 1st Term	Attendance 2nd Term	Attendance 3rd Term
	B. Modern European History.				
13.	General History of England. Professor Morse Stephens	3	45	49	49
14.	General History of Europe from the commencement of the 17th Century to the present time. Professor Morse Stephens	3	36	37	36
15.	History of the French Revolution. Professor Morse Stephens	2	7	7	10
16.	Constitutional History of England. Professor Morse Stephens	2	12	11	11
17.	Seminary. For advanced study and research in subjects connected with the History of Europe. Professor Morse Stephens	2	5	4	5
	C. American History.				
21.	American History from the Earliest Discovery to the End of the War for Independence. Professor M. C. Tyler	3	117	116	110
23.	American Constitutional History. Lectures, direct study of constitutional documents, and topical reports. Professor M. C. Tyler	2	17	17	16
28.	Undergraduate Seminary. Professor M. C. Tyler,	2	8	8	8
29.	American Historical Seminary. Open only to graduates. Professor M. C. Tyler	2	9	8	7
	II. POLITICAL SCIENCE.				
	A. Politics.				
31.	Political Institutions. Nature and historical development. Comparative study of modern political institutions, including municipal institutions, with especial reference to the practical working of political institutions in the United States. Lectures, reports, and discussions. Professor Jenks	3	25	25	24
32.	History of Political Ideas. Lectures and reports. Professor Jenks	1	9	9	10
33.	International Law. Professor Huffcut	1	68	69	68
34.	History and Evolution of the Law. Spring. Director Finch	2	---	---	74
35.	American Constitutional Law. Professor Pound,	1	71	64	63
36.	The Politics of Aristotle, with an introductory survey of political theories amongst Aristotle's contemporaries. Assistant Professor Hammond,	1	3	3	3
37.	Seminary. For special study of political questions. (See courses 60 and 61)	----	---	---	---
	B. Social Science.				
41.	Elementary Social Science. An elementary course in certain social problems, including a				

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
brief introduction on anthropology and the evolution of the family, followed by lectures on race problems and immigration, pauperism and crime. Associate Professor Willcox	2	31	32	33
43. Advanced Social Science (theoretical). Examination of the theories, methods, and results of the social sciences and especially of sociology. Associate Professor Willcox	2	8	9	9
44. Social Statistics. A course in statistical methods and results, with practical work in investigation and tabulation. Associate Professor Willcox,	2	10	10	8
C. Political Economy and Finance.				
51a. Political Economy. Elementary Course. Principles of Political Economy. Fall and winter. Assistant Professor Hull (two sections), and Dr. Bullock (one section)	3	91	84	---
51b. History of Political Economy. Transportation. Sections as in 51a. Spring. Assistant Professor Hull and Dr. Bullock	3	---	---	89
52. The Development of Economic Theories (chiefly in England) to 1848. Reading, abstracts, and lectures. Assistant Professor Hull	2	3	3	2
54. a. Money, Credit, and Banking. Fall. b. History of the Monetary and Financial Legislation of the United States. Winter and spring. Dr. Bullock	2	23	22	21
55a. Socialism and Communism. Fall. Dr. Bullock,	2	2	---	---
55b. Economics of Agriculture. Winter. Dr. Bullock,	2	---	3	---
55c. Methods of Industrial Remuneration. Spring. Dr. Bullock	2	---	---	2
56. Economic Legislation. Study of current economic problems, especially from the standpoint of practical legislation. Professor Jenks	2	8	9	9
57. Recent Industrial and Economic History of Europe and the United States. Associate Professor Willcox	2	7	5	4
59. Finance: Taxation, Financial Administration, Public Debts. Assistant Professor Hull	2	8	8	8
60. Graduate Seminary in Political Science. For graduates engaged in special investigations in Political Science. Questions in Politics, Social Science, Statistics, Economics, Finance. Professor Jenks, Associate Professor Willcox, Assistant Professor Hull, and Dr. Bullock	---	6	6	6
61. Undergraduate Seminary in Political Science. For advanced undergraduates, the work and methods being similar to those of 60. Professor Jenks, Associate Professor Willcox, Assistant Professor Hull, and Dr. Bullock	2	26	26	23
62. Lectures by the Department Fellows. Spring. Mr. Shepherd and Mr. Rawles (two lectures each)	---	---	---	---

	DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance 1st Term	2nd Term	3rd Term
	LAW.				
	Junior Year.				
1.	Criminal Law and Procedure. Fall and winter. Professor Pound	2	120	110	---
2.	Contract. Fall and winter. Professor Huffcut	2	135	125	---
3.	Agency. Winter. Professor Huffcut	3	---	123	---
4.	Torts. Spring. Professor Huffcut	5	---	---	121
5.	Real Property. Winter and spring. Professor Finch	4	---	100	98
6.	Law of Persons (including Domestic Relations). Spring. Professor Hardon	3	---	---	112
7.	Personal Property (including Bailments and Carriers). Fall. Professor Finch	4	106	---	---
8.	Sales. Winter. Professor Hardon	3	---	117	---
9.	Common Law Pleading and Practice. Fall. Professor Hardon	3	126	---	---
10.	Partnership. Spring. Professor Pound	2	---	---	116
	Senior Year.				
1.	Wills and Administration. Fall. Professor Finch,	3	71	---	---
2.	Bills, Notes, and Checks. Fall. Professor Huffcut,	3	65	---	---
3.	Civil Procedure under the Codes. Professor Pound	2	72	66	61
4.	Corporations. Professor Pound	2	73	68	65
5.	Real Property. Winter and spring. Professor Finch	3	---	63	64
6.	Sales. Fall. Professor Hardon	3	66	---	---
8.	Evidence. Winter. Professor Hardon	4	---	79	---
9.	(a) Statute of Frauds; (b) Fraudulent Conveyances; (c) Practical Suggestions concerning the Preparation, Trial, and Argument of Cases. Winter. Director Finch	2	---	62	---
10.	History and Evolution of the Law. Spring. Director Finch	2	---	---	74
11.	American Constitutional Law. Professor Pound,	1	71	64	63
12.	International Law. Professor Huffcut	1	68	69	68
13.	The Law of Shipping and Admiralty. Judge Coxe	----	---	---	160
14.	Theses presented for LL.B.	2	61	61	61
	Graduate Courses.				
1.	Real Property. Fall. Professor Finch	2	6	---	---
2.	Negligence. Professor Huffcut	2	18	8	7
3.	Federal Practice. Spring. Professor Hardon	2	---	---	15
4.	Corporations. Professor Pound	2	6	6	6
5.	Theses presented for LL.M.	----	---	---	7
	MATHEMATICS.				
	I. Prescribed Work.				
1.	For students in Arts, Philosophy, and Agricul-				

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
ture. Fall, Solid Geometry; winter, Algebra; spring, Trigonometry. Professor Jones (two sections throughout the year) and Dr. Snyder (one section, winter and spring)	3	67	82	76
2. For students in Science and Letters. Fall, Solid Geometry; winter, Algebra; spring, Trigonometry. Professor Jones (one section throughout the year), Dr. Hutchinson (one section, spring), Dr. Snyder (one section, winter)	5	32	82	76
3. For students in Civil Engineering. Fall, Algebra; winter, Trigonometry; spring, Analytic Geometry. Professor Wait (one section, spring), Dr. Murray (one section throughout the year), Mr. Allen (one section, fall and winter), Dr. Snyder (one section, fall)	5	50	51	62
4. For students in Sibley College courses. Fall, Analytic Geometry; winter, Differential Calculus; spring, Integral Calculus. Professor Wait (two sections, spring), Dr. Murray (one section throughout the year), Mr. Allen (two sections throughout the year), Dr. Hutchinson (two sections, fall and winter)	5	142	143	135
6. For Students in Architecture. Fall, Analytic Geometry; winter, Differential and Integral Calculus. Mr. Saurel (one section)	5	23	23	---
7. For students in Civil Engineering. Fall, Differential Calculus; winter, Integral Calculus; Professor Wait (one section), Dr. Hutchinson (one section)	5	42	43	---
II. Elective Work.—A. Pure Mathematics.				
10. Analytic Geometry and Calculus, for general course students. Assistant Professor McMahon (fall and winter), Dr. Hutchinson (spring),	3	12	12	15
11. Problems in Geometry, Algebra and Trigonometry; supplementary to courses 1 and 2. Professor Jones	1	12	10	8
12. Higher Algebra and Trigonometry; a continuation of courses 1 and 2. Professor Jones	2	7	6	6
13. Modern Synthetic Geometry, including Projective Geometry. Dr. Snyder	3	8	8	8
14. Binary Quantics. Mr. Allen	2	6	5	4
15. Advanced work in Analytic Geometry. Professor Wait (fall and winter), Assistant Professor McMahon (spring)	3	6	6	7
17a. Advanced work in Differential Calculus. Professor Wait (fall and winter) Assistant Professor McMahon (spring)	3	4	6	7
17b. Advanced work in Integral Calculus. Professor Wait (fall and winter), Dr. Snyder (spring),	2	4	4	4
18. Theory of Substitution-groups. Dr. Hutchinson,	2	4	4	4
19. General Theory of Algebraic Curves and Surfaces. Assistant Professor McMahon	3	1	1	1

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance 1st Term	Attendance 2nd Term	Attendance 3rd Term
21. Differential Equations. Dr. Murray (one section, fall and winter; two sections, spring)	3	2	1	6
25a. General Function-theory. Dr. Snyder	3	5	3	1
25b. Elliptic, Abelian, and Automorphic Functions. Dr. Snyder	3	2	1	1
40a. Descriptive Astronomy. Dr. Murray	2	2	2	3
41. Theoretical Mechanics. Assistant Professor McMahon	3	3	3	3
42. Fourier's Series and Spherical Harmonics; with applications to physical problems. Mr. Saurel,	2	4	4	4
44. Mathematical Theory of Sound; including the general theory of vibrating systems. Assistant Professor McMahon	3	3	2	2
44a. Mathematical Theory of Elasticity. Assistant Professor McMahon	1	1	1	1
47. Theses	2	1	2	3
PHYSICS.				
I. Undergraduate Work.				
1. Mechanics and Heat. Electricity and Magnetism. Acoustics and Optics. Professor Nichols (two lectures weekly), Assistant Professor Bedell, Messrs. Hotchkiss, Matthews, Shearer, Child, Timmerman and Sharp (recitations, two sections each, one hour weekly)	3	208	204	203
2. Longer course in Elementary Physics. Professor Nichols (two lectures weekly), and Mr. Rogers (three recitations weekly). The lectures are the same as in course 1	5	18	11	10
3. Physical Experiments. Theory and methods of physical experiments. Messrs. Rogers, Shearer, Timmerman and Sharp (twenty hours attendance each, weekly)	2	161	122	105
4. Electrical Measurements. Assistant Professors Moler and Bedell, and Messrs. Hotchkiss and Matthews (twenty hours attendance each, weekly)	4	76	93	89
5. A shorter course in Heat and Applied Electricity for students in Mechanical Engineering. Assistant Professor Moler and Mr. Matthews (each two hours daily)	2	44	43	22
6. Advanced laboratory practice in general Physics. Assistant Professor Merritt and Mr. Child (twenty hours attendance weekly)	5	7	---	---
8. Theory of the Galvanometer (fall). Application of photometry to electric lighting (winter). Theory of the Telephone (spring). Lectures. Professor Nichols	1	68	67	70
9. Practical Photography. (One lecture a week with laboratory practice.) Spring. Assistant Professor Moler and Messrs. Hotchkiss and Child	2	---	---	139

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
11a. Theoretical Physics. Mechanics and Thermodynamics. Assistant Professor Merritt. (Three hours lectures and one hour seminary, throughout the year)	3	7	7	7
13. Theory of Electricity and Magnetism. Dr. Bedell	2	---	7	7
14. Theory of Light. Mr. Shearer	3	5	5	5
17. Critical reading of original memoirs relating to Physics; followed in the spring term by reports upon original work done in the department. Professor Nichols	2	18	19	14
18. Absolute Measurements in Electricity and Magnetism. Assistant Professor Bedell	3	4	3	7
21. Magnetism of Iron. Assistant Professor Bedell	2	3	---	---
22. Electricity and Magnetism. Lectures and seminary. Assistant Professor Merritt	3	3	3	3
23. Theory of Alternate Currents (winter and spring). Assistant Professor Bedell	2	---	18	9

CHEMISTRY.

I. Required Courses.

1. General Inorganic Chemistry. a. Recitations. Assistant Professor Trevor, Mr. Kortright, Mr. Denham, and Mr. Knox (five sections each). b. Lectures. Professor Caldwell and Mr. Denham. c. Laboratory practice. Assistant Professor Trevor and Mr. Kortright (in attendance twenty-three hours weekly). Mr. Denham and Mr. Knox (each in attendance twenty-one hours weekly)	3	280	273	238
2. Qualitative Analysis. Elementary course. Fall and winter. Associate Professor Dennis, Mr. Smith and Assistant Morton (each twenty to forty hours weekly)	3	123	109	---
3. Quantitative Analysis. Elementary course. Spring. Associate Professor Dennis, Mr. Chamot and Assistant VanBuskirk (each twenty-three to thirty-three hours weekly)	3	---	---	110

II. Elective Courses.—A. Analytical Chemistry.

5. Qualitative Analysis. For students in science and those specializing in chemistry. Associate Professor Dennis, Mr. Smith and Mr. Morton (each twenty to forty hours weekly)	5	18	20	---
6. Quantitative Analysis, elementary, for those who have taken course 5. Associate Professor Dennis, Mr. Chamot and Assistant VanBuskirk (each twenty-three to thirty-three hours weekly)	5	2	---	16
7. Advanced Quantitative Analysis; in inorganic, organic, technical, sanitary, and agricultural				

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
work. Professor Caldwell, Associate Professor Dennis, and Mr. Denham (six hours weekly)	3–6	17	19	16
8. Assaying. Laboratory work. Spring. Mr. Smith,	2	---	---	19
9. Qualitative and Quantitative Gas Analysis. Lectures. Winter. Associate Professor Dennis	2	---	5	---
10. Technical Gas Analysis, comprising analysis of air, illuminating gas, generator gas, etc. Winter. Associate Professor Dennis and Mr. Cushman	2	---	5	---
11. Advanced Gas Analysis. Spring. Associate Professor Dennis and Mr. Cushman	1	---	---	1
12. Spectroscopic Chemical Analysis and Calorimetry. Lectures and laboratory practice. Fall. Associate Professor Dennis and Mr. Cushman,	3	6	---	---
B. Agricultural Chemistry.				
16. General Course in Agricultural Chemistry. Professor Caldwell	3	18	16	13
C. Organic Chemistry.				
20. Organic Chemistry. Lectures and recitations. Assistant Professor Orndorff	3	19	13	12
21. Organic Chemistry. Laboratory. Assistant Professor Orndorff	3	14	11	10
22. Special chapters in Organic Chemistry. Lectures. Assistant Professor Orndorff	2	3	3	3
23. Advanced Organic Chemistry. Laboratory. Assistant Professor Orndorff	----	5	5	4
24b. Stereochemistry. Lectures. Spring. Assistant Professor Orndorff	1	---	---	2
24c. Seminary in Organic Chemistry. Assistant Professor Orndorff	2	3	3	3
D. Inorganic Chemistry.				
26. Inorganic Chemistry, advanced course. Lectures. Associate Professor Dennis	3	11	11	9
27. Inorganic Chemistry. Laboratory. Associate Professor Dennis	2	2	1	1
E. Physical Chemistry.				
30. Experimental Physical Chemistry. Lectures. Assistant Professor Bancroft	3	7	5	3
31. Theoretical Physical Chemistry. Lectures. Assistant Professor Trevor	3	2	3	3
32. Laboratory in Physical Chemistry. Assistant Professor Bancroft	2–8	5	6	5
33. Electro-Chemistry. Lectures. Assistant Professor Bancroft	2	3	3	2

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
F. Miscellaneous Courses.				
40. German Chemical Readings. Winter and spring. Associate Professor Dennis	2	---	10	8
41. French Chemical Readings. Fall. Mr. Chamot,	2	4	---	---
43. Sanitary Chemistry. Lectures. Fall and Spring. Professor Caldwell	2	5	---	8
Theses for Graduation	2	9	9	9
Theses for Advanced Degrees	----	3	3	3
BOTANY AND ARBORICULTURE.				
I. Phanerogams.				
1. Botany. General course. Fall, plant-structure, outline of gross and minute anatomy, classification of plants, studies of types of the broader groups. Winter, the physiology of plants. Lectures. Professor Prentiss (one-third of the year), Associate Professor Atkinson (two-thirds of the year)	2	136	133	---
2. Morphology of Phanerogams. Spring. Assistant Professor Rowlee (seven hours weekly), and Mr. Wiegand (twelve hours weekly)	2-4	---	---	76
3. Systematic Botany. a. Laboratory course; critical and comparative study of phanerogamous species and orders. b. Principles of taxonomy, history and development of botanical systems. Lectures. Assistant Professor Rowlee (eight hours weekly)	3	13	12	9
4. Histology and Embryology of Plants. Assistant Professor Rowlee and Mr. Wiegand (each eight hours weekly)	3	11	11	9
5. Dendrology. Spring. Assistant Professor Rowlee (five hours weekly)	2	---	---	8
6. Herbarium work upon Phanerogams. Spring. Assistant Professor Rowlee (five hours weekly),	3	---	---	16
7. Exotics. Study of conservatory plants, management of plant houses, etc. Professor Prentiss and Mr. Shore	2	4	7	---
II. Cryptogams.				
8a. Lower Cryptogams. Methods of study and culture of bacteria and fungi. Associate Professor Atkinson and Dr. Durand (eight hours weekly)	3	18	---	---
8b. Lower Cryptogams. Algae. Associate Professor Atkinson and Dr. Durand (eight hours weekly)	3	9	---	---
9. Higher Cryptogams. Lectures and laboratory work on the biology of ferns. Associate Professor Atkinson and Dr. Durand (eight hours weekly)	3	---	9	11

	DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
			1st Term	2nd Term	3rd Term
10.	Fungi. Lectures tracing the development of typical species, the phylogeny of fungi, and the more important parasitic forms. Laboratory, parallel studies. Spring. Associate Professor Atkinson (nine hours weekly) and Dr. Durand (eight hours weekly)	3	---	---	12
	III. Investigations and Seminary.				
11.	Undergraduate Botanical Seminary. Professor Prentiss, Associate Professor Atkinson and Assistant Professor Rowlee	2	12	16	11
12.	Graduate Botanical Seminary	----	17	17	17
	ENTOMOLOGY AND GENERAL INVERTEBRATE ZOOLOGY.				
1.	Invertebrate Zoology. General course. Lectures and occasional practical exercises. Fall. Professor Comstock	3	47	---	---
2.	Special laboratory course in Invertebrate Zoology. Fall. Professor Comstock and Mr. MacGillivray (each forty hours weekly)	2–4	5	---	---
3.	Entomology. Lectures on the characteristics of the orders, sub-orders, and the more important families, with special reference to those of economic importance. Spring. Professor Comstock,	3	---	---	34
4.	Entomology. Laboratory work, insect anatomy, classification of insects, application of the theory of Natural Selection to Taxonomy and the study of the life history of insects. Fall and spring. Professor Comstock and Mr. MacGillivray (each forty hours weekly)	1½ to 9	18	---	14
5.	Lectures on applied entomology. Winter. Mr. Slingerland	2	---	11	---
7.	Summer course in Entomology and General Invertebrate Zoology. Lectures, field work, and laboratory work. Professor Comstock and Mr. MacGillivray. (Attendance 18)	2–11	---	---	---
	PHYSIOLOGY AND VERTEBRATE ZOOLOGY.				
1.	Physiology. Thirty-three lectures, demonstrations and practicums. Fall. Professor Wilder and Dr. Stroud	3	187	---	---
2.	Vertebrate Zoology. a. Twenty-two lectures, eleven practicums	3	---	50	---
	b. Elective laboratory work, two hours weekly. Winter. Professor Wilder and Dr. Stroud	2	---	4	---
3.	Neurology. a. Exercises. b. Elective laboratory work. Professor Wilder and Dr. Stroud	3 2	--- ---	--- ---	21
4.	Anatomical Methods and Gross Anatomy. Laboratory work with weekly recitation or lecture. Fall. Professor Gage and Dr. Hopkins	3	22	---	---

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
5. The Microscope and Microscopical Methods. Winter. Professor Gage and Dr. Hopkins	3	---	31	---
6. The Methods and Elements of Embryology. Spring. Professor Gage and Dr. Hopkins	4	---	---	7
7. Human or Comparative Anatomy, or Systematic Vertebrate Zoology. Laboratory work. Dr. Hopkins	2–5	7	24	12
8. Vertebrate Histology. Laboratory work. Professor Gage	3–5	10	9	---
9. Histology of the Nervous System. Laboratory, lectures, and recitation. Spring. Dr. Stroud	3	---	---	2
10. Department Conference. Professors Wilder and Gage, Messrs. Hopkins and Stroud	----	6	7	7
GEOLOGY, MINERALOGY, AND PALÆONTOLOGY.				
I. Required Courses.				
1. Mineralogy. Lectures and laboratory. A short course for Civil Engineers and Architects. Fall. Assistant Professor Gill (seven hours weekly) and Mr. Morton (five hours weekly)	3	37	---	---
2. Dynamical Geology. Lectures and laboratory. Winter. Assistant Professor Tarr (two hours weekly) and Mr. Bonsteel (five hours weekly),	3	---	40	---
3. Economic Geology. Spring. Lectures. Assistant Professor Tarr (two hours weekly) and Mr. Bonsteel (five hours weekly)	3	---	---	36
4. Lithology. Lectures and recitations. Special attention given to building-stones. Assistant Professor Gill (two and one-half hours weekly)	2	---	---	2
II. Elective Courses.				
A. Geology and Physical Geography.				
7. Physical Geography. Lectures. Assistant Professor Tarr (two hours weekly)	2	28	23	20
8. Laboratory and Field Course in Physical Geography. Assistant Professor Tarr (five hours weekly)	1	16	15	12
9. General Geology. Lectures. Assistant Professor Tarr (two hours weekly)	2	3	3	2
10. Laboratory and Field Course in Geology. In the spring. Thursday afternoons are devoted entire to field excursions. Assistant Professor Tarr and Mr. Bonsteel (two and one-half hours weekly),	1	1	1	1
11. Glacial Geology. Fall. Lectures and excursions. Assistant Professor Tarr (five hours weekly)	3	4	---	---
12. Geological Investigation. Field and laboratory work with readings, conferences, excursions, and the preparation of theses. Assistant Professor Tarr	3	1	2	1

	DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
			1st Term	2nd Term	3rd Term
13.	Geological Seminary. Preparation and reading of theses. Abstracts and discussions of the current geological literature. Assistant Professor Tarr (two hours weekly)	2	3	4	4
	B. Mineralogy and Petrography.				
15.	Mineralogy. Lectures and laboratory work. Fall and winter. Assistant Professor Gill (seven hours weekly)	3	5	4	---
16.	Physical Crystallography. Lectures and laboratory work. Spring. Assistant Professor Gill (seven hours weekly)	3	---	---	5
	C. Palæontology.				
22.	Historic Palæontology. Lectures. Fall. Assistant Professor Harris	3	4	---	---
23.	Elementary Conchology, recent and fossil. Lectures and laboratory work. Winter and spring. Assistant Professor Harris	3	---	4	3
24.	Special work in Tertiary Invertebrate Palæontology. Assistant Professor Harris	3-11	2	3	3
	AGRICULTURE.				
1.	Wheat culture; farms and farm buildings; fences and roads; farmyard manures and commercial fertilizers. Lectures. Fall. Professor Roberts	5	18	---	---
2.	Inspection of roads, bridges and farm buildings; agricultural surveys; practice. Fall. Professor Roberts	2	17	---	---
3.	Farm accounts; business customs and laws; swine husbandry; horse breeding; sheep husbandry, including early lamb raising. Lectures. Winter. Professor Roberts	5	---	16	---
4.	Judging horses, swine and sheep; practice on farm machinery. Winter. Professor Roberts	1	---	16	---
5.	Farm drainage; plows and plowing; corn, oats, barley, flax, hop and tobacco culture; grasses and forage plants. Spring. Professor Roberts	5	---	---	17
6.	Practice in fields and shops; draining, surveys and mapping. Spring. Professor Roberts	2	---	---	15
9.	Animal Industry. Principles of breeding and feeding; care, selection, and management of dairy and beef cattle. Lectures and practice. Fall and spring. Assistant Professor Wing	3	6	---	5
10.	Dairy Husbandry: milk and butter. Lectures and practice. Winter. Assistant Professor Wing	4	---	3	---
11.	Dairy Husbandry: cheese. Practice. Winter. Assistant Professor Wing	3	---	2	---
16.	Poultry: feeding, management and history of				

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
breeds; construction of henneries, incubators, and brooders. Lectures. Spring. Professor Wing	2	---	---	9
17. Practice in running incubators and brooders; judging fowls; caponizing. Spring. Professor Wing	1	---	---	6
HORTICULTURE.				
1. Evolution of Cultivated Plants. Lectures. Fall. Professor Bailey	3	8	---	---
2. The Literature of Horticulture. Seminary. Fall. Professor Bailey and Mr. Lodeman	1	7	---	---
4. Greenhouse Construction and Management. Lectures and laboratory work. Fall. Professor Bailey (one hour weekly) and Mr. Lodeman (one hour weekly)	1	4	---	---
5. The Botany of Cultivated Plants. Winter and spring. Professor Bailey	1	---	6	6
6. Pomology. Lectures and other class exercises upon the cultivation of fruits. Winter. Professor Bailey and Mr. Lodeman	3	---	15	---
7. Propagation of Plants. Winter. Mr. Lodeman	2	---	12	---
8 and 9. Seminary Work. Spring. Professor Bailey	1	---	---	12
10. Theory and Practice of Spraying Plants. Lectures and demonstrations. Spring. Mr. Lodeman	2	---	---	13
11. Practical work in the forcing houses and gardens, with familiar talks. Professor Bailey and Mr. Lodeman	1	3	3	1
12. Investigation incident to previous courses. Professor Bailey	2to3	5	12	5
VETERINARY SCIENCE.				
1. Veterinary Obstetrics. Fall. Professor Law	5	13	---	---
2. Veterinary Anatomy. Osteology. Fall. Professor Law	5	1	---	---
3. Veterinary Surgery. Winter. Professor Law	5	---	8	---
4. Veterinary Syndesmology. Winter. Professor Law	4	---	1	---
5. Veterinary Bacteriology. Contagious diseases. Spring. Professor Law	5	---	---	24
ARCHITECTURE.				
1. Architectural Drawing. Freshman course. Winter and spring. Mr. Higby	4	---	17	15
2. Building Materials and Construction. Freshman course. Lectures. Spring. Professor Babcock,	3	---	---	17
5 12. Building Construction. Sophomore course. Lectures and drawing. Assistant Professor Martin	3	14	13	14
7. 5 Shades and Shadows. Sophomore course. Fall.				

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
Lectures. Professor Babcock (hours weekly). Drawing, Mr. Higby (three hours weekly)	3	11	---	---
8. History of Architecture. For Sophomores and juniors. Fall, Egyptian, Greek and Roman Architecture. Winter, Byzantine and Romanesque Architecture. Spring, Gothic Architecture. Professor Babcock	5	32	30	28
10. Mechanics. For sophomores and juniors. Lectures. Spring. Professor Babcock	2	---	---	20
11. Drawing of Greek and Roman Detail. Junior course. Fall. Assistant Professor Martin	2	16	---	---
12. Design. Junior course. Associate Professor Osborne	3-4	14	13	12
13. Pen Drawing. Junior course. Mr. Harpster	2	15	15	---
14. Construction. Junior course. Winter. Assistant Professor Martin.	3	---	12	---
15. Ornament. Junior course. Spring. Professor Babcock	2	---	---	17
16. Junior Seminary. Associate Professor Osborne and Assistant Professor Martin	1	11	13	9
20. Senior course in History of Architecture. Fall, Renaissance. Winter, Modern. Professor Babcock	3-5	19	19	---
21. Construction. Senior course. Lectures. Assistant Professor Martin	1	18	17	5
22. Heating, Ventilation, etc. Senior course. Fall. Professor Babcock	3	25	---	---
22a. Steam and Hot Water Heating. Spring. Associate Professor Carpenter	1	---	---	16
23. Stereotomy. Lectures and drawing. Winter. Professor Babcock	3	---	18	---
24 and 24a. Design and Decoration. Senior course. Associate Professor Osborne	10	16	17	18
25. Professional Practice. Professor Babcock	1	---	---	16
26. Senior Seminary. Professor Osborne	2	15	16	16
27. Reading of Reber's History of Ancient Art Fall. Professor Babcock	2	16	---	---
CIVIL ENGINEERING.				
1a. Lettering, Round Writing. Mr. Parson (eight hours weekly)	1	---	---	45
1b. Lettering. Mr. Parson (fall, eight hours weekly; winter, sixteen hours weekly)	3	3	42	---
2. Linear Drawing and Tinting. Mr. Parson (fifteen hours weekly)	3	44	---	---
3. Descriptive Geometry. Associate Professor Jacoby (fall and winter, ten hours weekly, spring, thirteen hours), Mr. Comstock (six hours weekly), Mr. Ogden (fall, fourteen hours weekly; winter and spring, twelve hours weekly), Mr. Hatt (fall, ten hours, winter, fourteen hours, spring, twelve hours weekly), Mr. Parson (fall, four hours weekly; spring, two hours weekly),	2	182	182	182

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
breeds; construction of henneries, incubators, and brooders. Lectures. Spring. Professor Wing	2	---	---	9
17. Practice in running incubators and brooders; judging fowls; caponizing. Spring. Professor Wing	1	---	---	6
HORTICULTURE.				
1. Evolution of Cultivated Plants. Lectures. Fall. Professor Bailey	3	8	---	---
2. The Literature of Horticulture. Seminary. Fall. Professor Bailey and Mr. Lodeman	1	7	---	---
4. Greenhouse Construction and Management. Lectures and laboratory work. Fall. Professor Bailey (one hour weekly) and Mr. Lodeman (one hour weekly)	1	4	---	---
5. The Botany of Cultivated Plants. Winter and spring. Professor Bailey	1	---	6	6
6. Pomology. Lectures and other class exercises upon the cultivation of fruits. Winter. Professor Bailey and Mr. Lodeman	3	---	15	---
7. Propagation of Plants. Winter. Mr. Lodeman	2	---	12	---
8 and 9. Seminary Work. Spring. Professor Bailey	1	---	---	12
10. Theory and Practice of Spraying Plants. Lectures and demonstrations. Spring. Mr. Lodeman	2	---	---	13
11. Practical work in the forcing houses and gardens, with familiar talks. Professor Bailey and Mr. Lodeman	1	3	3	1
12. Investigation incident to previous courses. Professor Bailey	2to3	5	12	5
VETERINARY SCIENCE.				
1. Veterinary Obstetrics. Fall. Professor Law	5	13	---	---
2. Veterinary Anatomy. Osteology. Fall. Professor Law	5	1	---	---
3. Veterinary Surgery. Winter. Professor Law	5	---	8	---
4. Veterinary Syndesmology. Winter. Professor Law	4	---	1	---
5. Veterinary Bacteriology. Contagious diseases. Spring. Professor Law	5	---	---	24
ARCHITECTURE.				
1. Architectural Drawing. Freshman course. Winter and spring. Mr. Higby	4	---	17	15
2. Building Materials and Construction. Freshman course. Lectures. Spring. Professor Babcock,	3	---	---	17
6. Building Construction. Sophomore course. Lectures and drawing. Assistant Professor Martin	3	14	13	14
7. Shades and Shadows. Sophomore course. Fall.				

	DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
			1st Term	2nd Term	3rd Term
	Lectures. Professor Babcock (hours weekly). Drawing, Mr. Higby (three hours weekly)	3	11	---	---
8.	History of Architecture. For Sophomores and juniors. Fall, Egyptian, Greek and Roman Architecture. Winter, Byzantine and Romanesque Architecture. Spring, Gothic Architecture. Professor Babcock	5	32	30	28
10.	Mechanics. For sophomores and juniors. Lectures. Spring. Professor Babcock	2	---	---	20
11.	Drawing of Greek and Roman Detail. Junior course. Fall. Assistant Professor Martin	2	16	---	---
12.	Design. Junior course. Associate Professor Osborne	3-4	14	13	12
13.	Pen Drawing. Junior course. Mr. Harpster	2	15	15	---
14.	Construction. Junior course. Winter. Assistant Professor Martin.	3	---	12	---
15.	Ornament. Junior course. Spring. Professor Babcock	2	---	---	17
16.	Junior Seminary. Associate Professor Osborne and Assistant Professor Martin	1	11	13	9
20.	Senior course in History of Architecture. Fall, Renaissance. Winter, Modern. Professor Babcock	3-5	19	19	---
21.	Construction. Senior course. Lectures. Assistant Professor Martin	1	18	17	5
22.	Heating, Ventilation, etc. Senior course. Fall. Professor Babcock	3	25	---	---
22a.	Steam and Hot Water Heating. Spring. Associate Professor Carpenter	1	---	---	16
23.	Stereotomy. Lectures and drawing. Winter. Professor Babcock	3	---	18	---
24 and 24a.	Design and Decoration. Senior course. Associate Professor Osborne	10	16	17	18
25.	Professional Practice. Professor Babcock	1	---	---	16
26.	Senior Seminary. Professor Osborne	2	15	16	16
27.	Reading of Reber's History of Ancient Art Fall. Professor Babcock	2	16	---	---
	CIVIL ENGINEERING.				
1a.	Lettering, Round Writing. Mr. Parson (eight hours weekly)	1	---	---	45
1b.	Lettering. Mr. Parson (fall, eight hours weekly; winter, sixteen hours weekly)	3	3	42	---
2.	Linear Drawing and Tinting. Mr. Parson (fifteen hours weekly)	3	44	---	---
3.	Descriptive Geometry. Associate Professor Jacoby (fall and winter, ten hours weekly, spring, thirteen hours), Mr. Comstock (six hours weekly), Mr. Ogden (fall, fourteen hours weekly; winter and spring, twelve hours weekly), Mr. Hatt (fall, ten hours, winter, fourteen hours, spring, twelve hours weekly), Mr. Parson (fall, four hours weekly; spring, two hours weekly),	2	182	182	182

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
4. Pen Topography. Mr. Parson (twelve hours weekly)	3	---	45	---
5. Land Surveying. Mr. Hatt (eight hours weekly), Mr. Hayford (six hours weekly)	4	---	---	47
5a. City and Mine Surveying. Professor Crandall (fall, nine hours weekly; spring, six hours weekly). Mr. Hatt (fall, eleven hours weekly). Mr. Waesche (spring, seven and one-half hours weekly)	2	27	---	21
6. Colored Topography. Mr. Parson (winter, six hours; spring, sixteen hours weekly)	2	---	1	43
7. Mechanics of Engineering. Professor Church, Assistant Professor Spalding (ten hours weekly), Mr. Mott, Mr. Hayford, and Mr. Keays (fifteen hours weekly), Mr. Comstock (six hours weekly, fall)	5	268	231	235
8. Architectural Drawing. Mr. Parson (twelve hours weekly)	1	---	24	---
9. Structural Metals. Mr. Comstock (three hours weekly)	2	---	---	25
10. Structural Details. Associate Professor Jacoby and Mr. Comstock (six hours weekly)	3	---	46	---
11. Highway Construction. Assistant Professor Spalding (winter, three hours; spring, two hours weekly)	3	---	20	---
12a. Railway Location and Construction. Professor Crandall and Mr. Waesche (six hours weekly)	4	---	22	---
12b. Railway Economics. Mr. Beahan (three hours weekly)	2	---	---	19
13. Bridge Stresses. Associate Professor Jacoby (eight hours weekly)	4	---	---	21
13a. Bridge Designing. Associate Professor Jacoby (thirteen hours weekly)	3	24	---	---
14. Topographical Practice, etc. Two weeks' field work in the C. U. Surveys of Central New York, twelve hours daily, and one week office work, six hours daily. Spring. Professors Fuertes and Crandall, and Assistant Professor Spalding	3	---	---	19
14a. Geodetical Practice, etc., divided as in course fourteen, Professor Fuertes, Church and Crandall, Messrs. Comstock, Beahan, and Hooker	3	---	---	24
15. Spherical Astronomy. Professor Fuertes (fifteen hours weekly), Mr. Comstock and Mr. Hayford (twelve hours weekly), Mr. Comstock and Mr. Hayford (twelve hours weekly), Mr. Waesche (fifteen hours weekly)	15	23	---	---
16. Stereotomy and Theory of the Arch. Professor Crandall (six hours weekly)	3	42	---	---
17. Civil Construction. Assistant Professor Spalding (three hours weekly)	3	25	---	---
18. Hydraulics. Professor Church (four hours weekly)	4	26	---	---
19. Geodesy. Professor Crandall (fall, two hours weekly; spring, four hours weekly)	2 & 4	22	---	19

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance 1st Term	2nd Term	3rd Term
19a. Higher Geodesy. Professor Crandall (five hours weekly)	5	---	24	---
20. Theory of Oblique Arches and Stone Cutting. Professor Crandall (six hours weekly)	3	---	24	---
21. Hydraulic and other Motors. Professor Church (three hours weekly)	3	---	25	---
23 Hydrographic and Topographic Mapping. Drawing. Mr. Parson (six hours weekly)	2	---	---	24
24. Thesis, as assigned to specialists. Spring	4	---	---	23
25. Engineering Laboratory Work. Professor Fuertes, Professor Crandall (winter, three hours; spring, nine hours), Professor Church (winter, seven hours; spring, three hours weekly), Assistant Professor Spalding (fall, eleven hours; winter, three hours; spring, six hours weekly), Mr. Comstock (winter, five hours), Mr. Mott and Mr. Keays (fall and winter, seven and one-half hours), Mr. Ogden (spring, five hours weekly.) Mr. Hayford (winter, two and one-half hours weekly), Mr. Hatt (winter, two and one-half hours weekly)	2 3	24 21	46 46	24 25
26. Municipal and Sanitary Engineering. Professor Fuertes (five hours weekly)	5	---	24	---
28. Hydraulic Engineering. Professor Fuertes (four hours weekly)	4	---	---	24
29. Geodetic Office Work. Professor Crandall (seven hours weekly), Mr. Comstock (six hours weekly)	2	---	---	24
35. Advanced Astronomy. Professor Fuertes, Mr. Hayford, Mr. Comstock (six hours weekly)	3	---	---	2
36a. Advanced Mechanics. Professor Church (two hours weekly)	2	1	1	1
36b. Advanced Hydromechanics (two hours, winter and spring). Professor Church	2	---	1	1
36c. Special Hydraulics. Professor Church (two hours weekly)	2	2	2	1
36d. Special Hydraulics (one hour, winter). Professor Church	1	---	1	---
37. Advanced Geodesy. Professor Crandall (two hours weekly)	2	1	1	1
38. Bridge Engineering. Associate Professor Jacoby (two hours weekly)	2	2	2	2
39. Railway Engineering. Professor Crandall (two hours weekly)	2	1	1	1
40. Hydraulic Engineering. Assistant Professor Spalding (two hours weekly)	2	10	17	10
41. Sanitary Engineering. Mr. Ogden (winter, three hours; fall, one hour weekly	2	14	14	12
42. Masonry structures. Assistant Professor Spalding (two hours weekly)	2	2	2	2
MECHANICAL ENGINEERING AND MECHANIC ARTS.				
1. Kinematics. Juniors. Recitations. Mr. Adams				

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
(twelve hours weekly)	2	146	146	146
2. Materials of Construction. Juniors. a. Lectures and seminary. Fall. Assistant Professor Barr,	3	142	---	---
b. Seminary. Assistant Professor Barr	1	7	6	---
3. Machine Design. Juniors. Lectures. Winter and spring. Assistant Professor Barr	3	---	147	142
3a. Machine Design. Seniors. Lectures. Fall and winter. Assistant Professor Barr	3	59	55	---
4. Electrical Machinery. Seniors. Lectures. Fall and winter. Professor Ryan	3	87	87	---
5. Steam Engines and other motors. Thermodynamics and the theory of steam and other heat engines. Lectures. Fall and winter. Professor Thurston	5	121	119	---
6. Applied Theory of Steam and other Engines. Structure and operation. Spring. Professor Thurston	5	---	---	23
7. Steam Generation. Design, construction, and operation of the steam boiler. Spring. Professor Thurston	3	---	---	25
8. Shopwork. (a.) Freshmen. Woodworking, use of tools, carpentry, joinery, pattern-making, turning. (b.) Sophomores and juniors. Blacksmithing, use of tools, forging, welding, tool-dressing, etc. (c.) Juniors and sophomores. Foundry work, moulding, casting, mixing metals, brass-work, etc. (d.) Juniors and seniors. Machinist's work, use of hand and machine tools, working to form and to guage, finishing, construction, assemblage, erection. Professor Morris (thirty-six hours weekly), Messrs. Wiseman, Wood, Vanderhoef, Granger, Stanton, Pollay, and Head (each fifty-four hours weekly)	3	560	449	355
9. Freehand Drawing. (a.) Freshmen. (b.) Pen and ink. (c.) Decoration, modelling, water-colors. Associate Professor Cleaves (forty hours weekly). Messrs. Gutsell, Brauner and Wilson (each twenty-five hours weekly)	3	190	204	86
10. Instrumental Drawing. Spring. Associate Professor Cleaves and Messrs. Brauner and Wilson,	3	---	---	83
11. Mechanical Drawing. Assistant Professor H. D. Williams and Messrs. Reid (each fifteen hours weekly)	2	112	103	93
12. Junior Designing and Drawing. Assistant Professor H. D. Williams and Messrs. Reid (each fifteen hours weekly)	2	135	129	123
13. Designing and Drawing. Seniors. Fall and winter. Professor Ryan and Assistant Professor Barr (fifteen hours each)	2	135	130	---
14. Mechanical Laboratory. Juniors. Lectures. Professor Carpenter (six hours weekly). Messrs. Preston, Eldredge, Macomber, Houghton, and Kranz, and Mr. Bierbaum (eighteen hours				

	DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
			1st Term	2nd Term	3rd Term
	weekly)	2	154	156	140
15.	Mechanical Engineering. Seniors. Lectures in fall and winter. Professor Carpenter (six hours weekly. Messrs. Preston, Eldredge, Macomber, Houghton, Kranz, and Bierbaum eighteen hours weekly)	2	135	130	---
16.	Electrical Engineering. Graduates. Professor Ryan and Mr. Macomber	1–9	11	10	50
17.	Advanced work in special courses and graduate work in Mechanical Engineering as may be assigned. Professor Thurston	----	16	16	16
18.	Special Research; Commercial Tests. Graduates and advanced students. Professor Carpenter (six hours weekly)	1–6	35	26	10
19.	Elementary Problems in Consulting Practice. Lectures, mechanical laboratory, practice and research. Professor Carpenter (twenty-four hours weekly)	1–5	35	26	27
20.	History of the Development of Electrical Engineering. Lectures. Seniors and graduates. Spring. Professor Ryan	1	---	---	12
21.	Finance of the Production and Utilization of Electrical Energy. Lectures. Seniors and graduates. Spring. Professor Ryan	1	---	---	12
23.	Inspection, Tours and Reports. Professor Thurston	1	---	---	1
24.	Naval Architecture. Principal Durand	5	8	7	6
25.	Ship-building and Design. Assistant Professor McDermott	3	7	7	5
26.	Marine Machinery. Principal Durand	5	---	7	3
27.	Advanced work in Naval Architecture. Principal Durand	2	1	1	1
28.	Advanced work in Ship Design. Assistant Professor McDermott	3–9	2	2	4
29.	Advanced work in Marine Machinery. Principal Durand	2	---	2	1
30.	Seminary in Marine Engineering. Principal Durand and Assistant Professor McDermott (each one hour weekly)	1	5	5	5
33.	Engine Design, etc. Seniors. Assistant Professor Barr	2	---	---	2
34.	Machine Tools. Seniors. Lectures. Spring. Assistant Professor Barr (fifteen hours weekly),	1–5	---	---	20
35.	Electrical Engineering. Study of University equipment, local "plants," etc. Professor Ryan and Mr. Macomber	2	15	17	15
36.	Finance of Engineering and Economics of the Manufacturing Establishment. Spring. Professor Thurston	2	---	---	22
37.	Electric Railways. Mr. Macomber	1	9	11	---

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
MILITARY SCIENCE AND TACTICS.				
1. Infantry Drill 2. Artillery Drill 3. Military Signalling Lieutenant Bell (three hours weekly)	2–3	446	43	313
4. Military Science. Lectures. Winter. Lieutenant Bell	2	---	20	---
HYGIENE AND PHYSICAL CULTURE.				
1. Hygiene and Physical Culture. Required of all freshmen. Lectures. Fall. Professor Hitchcock,	1	288	---	---
5. Gymnastic Exercises for men who are imperatively in need of special physical development. Mr. Lannigan	2	18	---	14
6. Gymnasium Exercises. Required of freshmen. Winter. Mr. Lannigan	4	---	133	---
7. Women's Gymnastic Exercise. Required of freshmen and sophomores. Miss Canfield	2	68	65	65

APPENDIX VI.

PUBLICATIONS.

By the University.

Cornell studies in classical philology; edited by B. I. Wheeler, C. E. Bennett, G. P. Bristol and A. Emerson:

iv. The development of the Athenian constitution, by G. W. Botsford. [Boston], 1893. 8°. pp. viii + 249.

v. Index Antiphonteus, composuit F. L. Van Cleef. [Boston], 1895. 8°. pp. vi. + 173.

Library bulletin of Cornell University. Vol. iii., no. 9–11, June, 1895–April, 1896. Ithaca, N. Y., 1895–96. 3 nos. l. 8°.

The philosophical review; edited by J. G. Schurman and J. E. Creighton. Vol. iv., no. 3–vol. v., no. 3. May, 1895–May, 1896. 2 *m.* Boston, 1895–96. 7 nos. 8°.

The physical review; a journal of experimental and theoretical physics; conducted by E. L. Nichols and E. Merritt. Vol. ii., no. 6–vol. iii., no. 6, May, 1895–May, 1896. 2*m.* New York, 1895–96. 7 nos. 8°.

Transactions of the Association of Civil Engineers, Cornell University. Vol. iii., 1894–95. Ithaca, N. Y., 1895. 8°.

Proceedings of the Electrical Society of Cornell University. Vol. ii., iii., 1894–96. Ithaca, N. Y., 1895–96. 2v. 8°.

7th annual report of the Agricultural Experiment Station. 1894. Albany, 1895. 8°. *Plates* and *figs.*

Bulletin of the Agricultural Experiment Station. No. 86–117, March, 1895–May, 1896. Ithaca, N. Y., 1895–96. 32 nos. 8°. *Illus.*

6th annual report of the Meteorological Bureau and Weather Service of the State of New York. 1894. Albany, 1895. 8°.

New York State Weather Bureau: report. Vol. vii., 1895. *m.* Ithaca, N. Y., 1895. 4°.

"Issued in co-operation with the U. S. Department of Agriculture, Weather Bureau. Central office at Cornell University."

New York State Weather Bureau: weather-crop bulletin, issued in co-operation with the U. S. Department of Agriculture, Weather Bureau. Vol. vii.–viii., no. 10, 20 April, 1895–27 June, 1896. *w.* [Ithaca, N. Y.], 1895–96. 34 broadsides.

By Officers.

In the present list are included the titles of books, pamphlets, and signed contributions to periodicals, transactions, etc., published by officers and fellows of the University during the period extending from April 1, 1895, to June 30, 1896, together with a few of earlier date not recorded in former lists.

Adams, E. T. Artistic engine room interiors. (Engineering Magazine, March, 1896, vol. x., p. 1046.)

—— Coiled springs. (American Machinist, 21 May, 1896.)

—— Good regulations and the shaft governor. (Electrical World, 23 Nov., 1895, vol. xxvi., p. 566.)

—— The shaft governor. (Cassier's Magazine, March, 1896, vol. ix., p. 477.)

Albee, E. The ethical system of Richard Cumberland. (Philosophical Review, May, July, 1895, vol. iv., pp. 264, 371.)

—— The relation of Shaftesbury and Hutcheson to utilitarianism. (*Same*, Jan., 1896, vol. v., p. 24.)

—— [Review of] The elements of Ethics; by J. H. Hyslop. (*Same*, Sept., 1895, vol. iv., p. 543.)

—— [Review of] Ethic, and Tractatus de intellectus emendatione et de via; translated from the Latin of B. de Spinoza by W. H. White. (*Same*, Nov., 1895, vol. iv., p. 656.)

—— [Review of] Hedonistic theories, from Aristippus to Spencer; by J. Watson. (*Same*, Jan., 1896, vol. v., p. 62.)

Atkinson, G. F. Albert N. Prentiss. (Botanical Gazette, May, 1896, vol. xxi., p. 283.)

—— Damping off. (Cornell University Agricultural Experiment Station. Bulletin, May, 1895, no. 94, p. 230.)

—— The probable influence of disturbed nutrition on the evolution of the vegetable phase of the sporophyte. (Amer. Naturalist, May, 1896, vol. xxx., p. 353.)

—— Some observations on the development of colletotrichum lindemuthianum in artificial cultures. (Botanical Gazette, July, 1895, vol. xx., p. 305.)

—— [Review of] Elements of plant anatomy; by Emily Gregory. (School Review, April, 1896, vol. iv., p. 240.)

—— [Review of] Pammel, L. H., Rutabaga rot. (Botanisches Centralblatt, 1895, vol. lxiv., p. 355.)

—— [Review of] A plum scale in Western New York; by M. V. Slingerland. (*Same*, 1896, vol. lxv., p. 395.)

Austin, W. H. Cornell student activities: 1. Fraternities. (Cornell Magazine, Oct., 1895, vol. viii., p. 10.)

—— Of book-worms. (Nation, 16 April, 1896, vol. lxii., p. 305.)

——, *editor*. The Cornell Magazine, vol. viii., Oct., 1895–June, 1896.

Bailey, L. H. The Horticulturist's rule-book. 4th ed. New York, 1896. 16°. pp. ix. + 312.

—— Plant-breeding; five lectures upon the amelioration of domestic plants. New York, 1895. 16°. pp. xii. + 293.

—— The American Dahlia Society. (Garden and Forest, 16 Oct., 1895, vol. viii., p. 418.)

—— The bearing of evolution-teaching upon plant-cultivation. (Report of the New Jersey Board of Agriculture, 1895.)

—— Blackberries. (Cornell University Agricultural Experiment Station. Bulletin, Aug., 1895, no. 99. p. 413.)

—— Botany at the A. A. A. S. (Botanical Gazette, Dec., 1895, vol. xx., p. 554.)

—— The China asters, with remarks upon flower-beds. (Cornell University Agricultural Experiment Station. Bulletin, April, 1895, no. 90, p. 139.)

—— The dwarf lima beans. (*Same*, April, 1895, no. 87, p. 79.)

—— Experimental evolution amongst plants. (Transactions of the Massachusetts Horticultural Society, 1895, pt. i.)

—— Extension work in horticulture. (Cornell University Agricultural Experiment Station. Bulletin, Jan., 1896, no. 110, p. 122.)

—— Factors of organic evolution from a botanical standpoint (the survival of the unlike.) (Proceedings of the American Philosophical Society, Jan., 1896, vol. xxxv, p. 88.)

—— Forcing-house miscellanies. (Cornell University Agricultural Experiment Station. Bulletin, June, 1895, no. 96, p. 297.)

—— Fruit brevities. (*Same*, May, 1896, no. 117, p. 347.)

—— General observations respecting the care of fruit trees, with some reflections upon weeds. (*Same*, Oct., 1895, no. 102, p. 503.)

—— Horticulture at Cornell. (Science, 20 Dec., 1895, vol. ii., p. 831.)

—— List of books relating to "Country occupations." (*In* Leypoldt & Iles' "List of books for girls and women and their clubs." 1895. p. 126.)

—— "Nature of the binary name," again. (Botanical Gazette, April, 1896, vol. xxi., p. 246.)

—— New varieties of plants [5 articles]. (American Gardening, May–June, 1896, vol. xvii.)

Serial publication of an address upon "Van Mons and Knight and the production of new varieties of plants," delivered before the Pennsylvania Horticultural Society March 17, 1896.

—— Notes on carex. XVIII. (Botanical Gazette, Jan., 1896, vol. xxi., p. 1.)

—— Notions about the spraying of trees, with remarks on the canker-worm. (Cornell University Agricultural Experiment Station. Bulletin, Sept., 1895, no. 101, p. 479.)

—— On the untechnical terminology of the sex-relation in plants. (Science, 5 June, 1896, N. S. vol. iii., p. 825.)

—— Orchard management. (29th annual report of the Ohio State Horticultural Society, 1895–96, p. 47.)

—— Orchard notes from western New York. (Garden and Forest, 29 May, 1895, vol. viii., p. 215.)

—— Plant breeding. (*Same*, 7 Aug., 1895, vol. viii., p. 318.)

—— The pole lima beans. (Cornell University Agricultural Experiment Station. Bulletin, Feb., 1896, no. 115, p. 289.)

—— Reflective impressions of the nursery business. (Report of the 20th annual meeting of the Amer. Assoc. of Nurserymen, 1895, p. 40.)

—— Revised opinions of the Japanese plums. (Cornell University Agricultural Experiment Station. Bulletin, Jan., 1896, no. 106, p. 1.)

—— Self-reliance in farming. (Garden and Forest, 29 Jan., 1896, vol. ix., p. 42.)

—— Shall we irrigate orchards in New York? (*Same*, 12 June, 1895, vol. viii., p. 236.)

—— Sketch of the relationship between American and Eastern Asian fruits. (Year-book of the U. S. Agricultural Department, 1895, p. 437.)

—— The spraying of fruits. (*In* Thomas, J. J. American Fruit culturist. New ed.)

—— Variation after birth. (Amer. Naturalist, Jan., 1896, vol. xxix, p. 17.)

——Vergennes and Moore's diamond grapes. (Garden and Forest, 4 Dec., 1895, vol. viii., p. 487.)

—— Western New York notes. (*Same*, 19 June, 1895, vol. viii., p. 248.

—— Winter muskmelons. (Cornell University Agricultural Experiment Station. Bulletin, June, 1895, no. 95, p. 273.)

—— [Review of] Elements of botany; by F. Darwin. (Science, 6 Dec., 1895, N. S. vol. ii., p. 774.)

Bailey, L. H., ***and*** **G. H. Powell.** Cherries. (Cornell University Agricultural Experiment Station. Bulletin, July, 1895, no. 98, p. 379.)

Bailey, L. H., ***and*** **A. P. Wyman.** Sweet peas. (*Same*, Feb., 1896, no. 111, p. 165.)

Also in Florist's Exchange, 11 April, 1896, vol. viii.

Bailey, L. H., ***and others.*** The 1895 chrysanthemums. (*Same*, Feb. 1896, no. 112, p. 209.)

Bailey, L. H., *editor.* Rural science series. New York, 1895-96. 16°.

Bancroft, W. D. The chemical potential of the metals. II. (Physical Review, Jan., 1895, vol. iii., p. 250.)

—— On ternary mixtures. [3 articles.] (*Same*, July-Nov., 1895, vol. iii., pp. 21, 114, 193.)

—— Solids and vapors. (*Same*, May, 1896, vol. iii., p. 401.)

Barr, J. H. Mechanics of the shaft governor. (Sibley Jour., Feb., 1896, vol. x., p. 185.)

—— Notes on machine design. (Year book of the Soc. of Engineers, University of Minnesota, 1896.)

—— The proportions of high-speed engines. (Transactions of the Amer. Soc. of Mechanical Engineers, Dec., 1895.)

To form a part of vol. xvii. of the Transactions.

—— Stress on bolts due to screwing up and to external load. (Amer. Machinist, 15 Aug., 1896, vol. xviii., p. 546.)

—— The voracity of a feed pump. (Power, Oct, 1895, vol. xviii., p. 546.)

Bedell, F. Electrical resonance and some allied phenomena. (Proceedings of the Electrical Society of Cornell University, 1894-5, vol. ii., p. 78.)

—— The evolution of the transformer. (*Same*, 1895-6, vol. iii.)

—— Principles of the magnetic field. (Electric Power, March, April, 1896, vol. ix., pp. 237, 314.)

—— Simple analytical theory of the transformer. (Sibley Jour., Dec., 1895, vol. x., p. 101.)

—— The simple transformer diagram. (*Same*, Nov., 1895, vol. x., p. 51.)

—— Transformer. (Johnson's universal cyclopædia, vol. viii., 1895.)

—— Units. (Standard dictionary. Vol. ii., 1896.)

Also published separately.

—— Die Wirkungsweise des einphasigen synchronen Motors. (Electrotechnische Zeitschrift, 16 May, 1895, vol. xvi., p. 311.)

Bedell F., A. *and* **C. Crehore.** Alternating currents; an analytical and graphical treatment for students and engineers. 3d ed. New York, 1895. 8°. p. 325. *Figs.*

—— *Same. German.* Theorie der Wechselströme in analytischer und graphischer Darstellung; autorisirte Uebersetzung von A. H. Bucherer. Berlin, 1895. 8°. pp. xiii. + 266. *Figs.*

—— Resonance in transformer circuits. (Physical Review, May, 1895, vol. ii., p. 442.(

Also in the Electrical Engineer [London] 31 May, 1885, vol. xv., p. 624; Electrical Review [London] 31 May, 1895, vol. xxxvi·, p. 676.

Bedell, F., *associate editor.* The physical review. May, 1895-May, 1896.

Bennett, C. E. A Latin grammar. 2d ed. Boston, 1895. sm. 8°. pp. x. + 265.

—— *Same.* 3d and 4th ed. 1895-96.

—— Appendix to Bennett's Latin grammar. Boston, 1895. sm. 8°. pp. xiii. + 232.

—— Discussion [on the relation of the linguistic to the humanistic elements in the teachings of the classics.] (Proceedings of the ninth annual convention of the Assoc. of Colleges and Preparatory Schools of the Middle States and Maryland, 1895, p. 133.)

—— Entgegnung [to F. Skutsch]. (Deutsche Literaturzeitung, 11 Jan., 1896, Jahrg. xvii., col. 62.)

Bristol, G. P. Practical working of the program suggested by the Committee of Ten. (Proceedings of the 10th Conference of Assoc. Academic Principals, 1896, p. 710.)

—— Should the study of a modern language precede Latin in the school course? (Proceedings of the University Convocation of the State of New York, 1895, p. 845.)

—— Substitutes for Caesar in the Latin course of secondary schools. (Proceedings of the 10th annual Conference of Assoc. Academic Principals, 1896, pp. 628, 633.)

Bullock, C. J. The finances of the United States from 1775 to 1789 with especial reference to the budget. Madison, Wis., 1895. 8°. pp. viii + 156.

Burr, G. L. Sketch of Andrew Dickson White. (Popular Science Monthly, Feb., 1896, vol. xlviii., p. 546.)

Carpenter, R. C. Heating and ventilating buildings. 1st ed., 1st thous. New York, 1896. 8°. pp. xiii. + 411. *Frontisp.* and *figs.*

—— The amount of heat transmitted by radiating surfaces. (Heating and Ventilation, 15 June, 1895.)

—— Application of entropy. (Power, April, 1895.)

—— Boiler explosions. (Heating and Ventilation, 15 Nov., 1895.)

—— Calorific values of different fuels. (Power and Transmission, June, July, 1894.)

Reprinted in Sibley Jour., March, 1895, vol. ix., p. 229.

—— Determination of moisture in steam. (Sibley Jour., March, 1896, vol. x., p. 235.)

—— Dimensions of registers and ventilating flues. (Heating and Ventilation, 15 May, 1896.)

—— Discussions: Indicator in dynamometric testing; Maximum contemporary economy of the steam engine; Regenerator of hot-air engine; Distribution of moisture in steam; Steam used in electric plants; Transverse strength of cast iron. (Transactions of the Amer. Soc. of Mechanical Engineers, 1894–95, vol. xv., xvi.)

—— The effect of length of specimen on the percentage of extension. (*Same*, 1895, vol. xvi., p. 904.)

—— Effect of temperature on the strength of wrought iron and steel. (*Same*, Nov., 1895.)

To form a part of vol. xvii. of the Transactions.

—— Efficiency of boilers with varying rates of combustion. (Power, Dec., 1895.)

—— Entropy. (Power and Transmission, March, 1895.)

—— The equipment of engineering schools [discussion]. (Proceedings of the Soc. for the Promotion of Engineering Education, 1894, vol. i., p. 172.)

—— Fly wheel explosions. (Electrical World, 24 Nov., 1894, vol. xxiv., p. 539.)

—— Force required and work performed in driving and pulling cut and wire nails. (Transactions of the Amer. Soc. of Mechanical Engineers, 1895, vol. xvi., p. 1002.)

—— Forced blast system of heating and ventilation. (Heating and Ventilation, 15 Dec., 1895.)

—— Heating with exhaust steam. (*Same*, 15 March, 1896.)

—— Heating with hot air. (*Same*, 15 Jan., 1896.)

——Indicator card of average power [discussion]. (Transactions of the Amer. Soc. of Mechanical Engineers, 1894, vol. xv., p. 583.)

—— Loss of efficiency in direct radiators due to massing of surface. (Heating and Ventilation, 15 May, 1895.)

—— Mechanical equipment of power stations. (Cassier's Magazine, April, 1895, vol. vii., p. 473.)

—— Mechanical refrigeration. iii., iv. (Sibley Jour., April, May, 1894, vol, viii., pp. 282, 325.)

—— Methods of insulating underground systems of steam piping. (Heating and Ventilation, Feb., 1896.)

Also in Domestic Engineering, Feb., 1896.

—— A new coal calorimeter. (Transactions of the American Society of Mechanical Engineers, 1895, vol. xvi., p. 1040.)

—— New form of steam calorimeter. (Age of Steel, 23 May, 1896.)

Presented at the St. Louis meeting of the Amer. Soc. of Mechanical Engineers, May, 1896, to form a part of vol. xvi. of their Transactions.

—— Notes regarding boiler testing. (Technic, May, 1896.)

—— Original research by students. (Proceedings of the Soc. for the Promotion of Engineering Education, 1894, vol. i., p. 217.)

—— Practical application of entropy. (Power, April, 1895.)

—— Refrigeration and ice making machinery [4 articles]. (Engineering Mechanics, Feb.—June, 1896.)

—— The saturation curve as a reference line for indicator diagrams. (Transactions of the American Soc. of Mechanical Engineers, 1894, vol. xv., p. 904.)

—— Size of pipes to supply radiating surfaces. (Heating and ventilation, 15 April, 1896.)

—— Standards employed in engine testing. (Technic, 1894.)

Reprinted in Sibley Jour., Oct., 1894, vol. ix., p. 1.

—— Steam plant for small electric light and power station. (Cassier's Magazine, Feb., 1896, vol. ix., p. 339.)

—— Test of Hogon boiler. (Boiler Quarterly Review, April, 1895.)

—— Testing of steam radiators. (Transactions of the Amer. Soc. of Heating and Ventilating Engineers, July, 1895, vol. i., p. 98).

—— Tests made on the experimental engine at Sibley College (Transactions of the Amer. Soc. of Mechanical Engineers, 1895, vol. xvi., p. 913.)

—— Competition of electrical and steam railroads. (Proceedings of the Electrical Society of Cornell University, 1896, vol. iii., p. 82.)

—— Ventilation and buildings [2 articles.] Heating and Ventilation 15 May, 15 June, 1895).

Church, I. P. Mechanics of the Ferris wheel (with stiff spokes). (Engineering News, 4 July, 1895, vol. xxxiv.)

Corson, H. The aims of literary study. 2d ed. New York, 1895. 16°. p. 153.

—— *Same.* 3d and 4th eds. 1895–96.

—— The voice and spiritual education. New York, 1896. 16°. p. 198.

Creighton, J. E. The nature of intellectual synthesis. (Philosophical Review, March, 1896, vol. v., p. 135.)

—— The study of philosophy. (Book Reviews, June, 1895, vol. iii., p. 29).

—— [Review of] Kant's Erkenntnistheorie und Metaphysik in den vier Perioden ihrer Entwickelung; von E. von Hartmann. (Philosophical Review, Sept., 1895, vol. iv., p. 553.)

—— [Review of] Philosophy of mind; by G. T. Ladd. (*Same*, July, 1895, vol. iv., p. 427.)

——, *American editor.* Kant-Studien. Bd. i., Heft. 1. Hamburg, 1896, 8°.

——, *associate editor.* The philosophical review. May, 1895–May 1896.

Dennis, L. M. Gerhard Krüss. (Jour. of the Amer. Chemical Soc., June, 1895, vol. xvii., p. 423.)

—— The rare elements. (Mineral Industry of the U. S. 1896, vol. v.)

—— Über Krystallisiertes Aluminumchlorid. (Zeitschrift für anorganische Chemie, 1895, Heft 5 u. 6, vol. ix., p. 339.)

Durand, E. J. Hints for the preservation of myxomycetes. (Asa Gray Bulletin, July, 1895, vol. iii., p. 29.)

Durand, W. F. Curves showing the relation between equivalent hollow and solid shafts. (Jour. of the Soc. of Naval Engineers, Aug., 1895, vol. vii., p. 507.)

—— Diagrams showing the distribution of steam on its way through a triple expansion engine. (Marine Review, 10 Oct., 1896, vol. xii., p. 8.)

—— Electricity for marine propulsion. (Cassier's Magazine, June, 1895, vol. viii., p. 143.)

—— The life history of an ocean wave. (Sibley Jour., April, 1896, vol. x., p. 287.)

—— Note on the relation between reduced and true wetted surface. (Proceedings of the Soc. of Naval Architects and Marine Engineers, 1895, vol. iii., p. 138.)

—— The number of longitudinal intervals in ship computations as affecting the accuracy of integration for displacement. (Proceedings of the Soc. of Naval Architects and Marine Engineers, 1895, vol. iii., p. 129.)

—— The transformation of empirical equations. (Sibley Jour., Oct., 1895, vol. x., p. 17.)

Elmer, H. C., *editor*. P. Terenti Phormio, with notes and introductions by H. C. Elmer. New York, 1895. 16°. pp. 1 + 182. (Students' series of Latin classics.)

Emerson, A. [Review of] Pauly's Realencyclopædie der Klassischen Altertums-wissenschaft; neue Bearbeitung von G. Wissowa. (Amer. Jour. of Philology, April, 1896, vol. xvii., p. 100.)

Emerson, O. F. History of the English language. 2d ed. New York, 1895. sm. 8°. pp. xiii. + 415.

—— "Colleges" at Harvard and elsewhere. (Nation, 7 Nov., 1895, vol. lxi., p. 327.)

—— "College" again. (*Same*, 28 Nov., 1895, vol. lxi., p. 387.)

—— A parallel between the middle English poem Patience and an early Latin poem attributed to Tertullian. (Publications of the Modern Language Assoc., 1895, vol. x., p. 242.)

—— Scottish language. (Johnson's universal cyclopædia, 1895, vol. vii., p. 394.)

—— Word-lists: general list B, Ithaca Local Circle. (Dialect Notes, 1895, pt. viii., p. 395.)

Prepared with B. S. Monroe.

—— [Review of] Elementary composition and rhetoric; by W. E. Mead. (School Review, April, 1895, vol. iii., p. 235.)

—— [Review of] A primer of historical English grammar; by Henry Sweet. (*Same*, April, 1886, vol. iv., p. 236.)

—— [Review of] Studies in the evolution of English criticism; by L. J. Wylie. (*Same*, May, 1895, vol., iii., p. 299.)

—— *editor*. Johnson's Rasselas, edited with introduction and notes by O. F. Emerson. New York, 1895. 16°. pp. lv.+179. English readings series.

Fetter, F. The exploitation of the the theories of value in the discussion of the standard of deferred payments. (Annals of the Amer. Acad. of Political and Social Science, May, 1895, vol. v., p. 882.)

Forman, L. L. Ethopoiia in Lysias. (Classical Review, March, 1896, vol. x., p. 105.)

Gage, S. H. Agnes Claypole's method of fixing paraffin sections to the slide. (*Observer*, April, '95, vol. vi., p. 60.)

—— Alfred Clifford Mercer, President of the American Microscopical Society. (*Same*, Jan., 1896, vol. vii., p. 26.)

Also in the Amer. Monthly Microscopical Jour., Feb., 1896, vol. xvii., p. 41.

—— Improvements in oil-sectioning with collodion. (Transactions of the Amer. Microscopical Society, 1895, vol. xvii., p. 361.)

—— The processes of life revealed by the microscope; a plea for physiological histology; Presidential address before the American Microscopical Society, Aug. 21, 1895. (*Same*, 1895, vol. xvii., p. 1.)

Also in Science, N. S., vol. ii., p. 209; Amer Monthly Microscopical Jour., vol. xvi., p. 292; abstract in Microscopical Bulletin and Science News, Oct., Dec., 1895, p. 41.

—— Science or poetry? [reply to W. K. Brooks' remarks on the address before the Microscopical Society]. (Science, 1 Nov., 1895, N. S., vol. ii., p. 590.)

—— William Henry Seaman. (Observer, Oct., 1895, vol. vi., p. 173).

—— [Review of] Leitfaden für histiologische Untersuchungen; von B. Rawitz. (Science, 4 Oct., 1895, N. S., vol. ii., p. 455.)

Hammond, W. A. Hylozoism; a chapter in the early history of science. (Philosophical Review, July, 1895, vol. iv., p. 394.)

—— [Review of] Geschichte des Idealismus; von O. Willmann. (*Same*, Sept., 1895, vol. iv., p. 539.)

Harris, G. D., *editor.* Bulletins of American paleontology: 1. Claiborne fossils, by G. D. Harris; 2. New or little known tertiary mollusca from Alabama and Texas, by G. H. Aldrich; 3. Neocene mollusca of Texas, by G. D. Harris; 4. The midway stage, by G. D. Harris.

—— Tertiary paleontology of Texas. (Proceedings of the Academy of Natural Sciences, 1895, p. 45.)

Also separately printed.

Hart, J. M. A handbook of English composition. Philadelphia, 1895. 12°. pp. xii, + 360.

Hayford, J. F. The tidal problem and the limitations of the present solution of that problem. (Transactions of the Assoc. of Civil Engineers of Cornell University, 1896. Vol. iv.)

Hewett, W. T. Matthias de Vries and his contributions to Netherland philology. [Baltimore, 1895]. 8°. pp. 10.

"Reprinted from the Proceedings of the Modern Language Association of America for 1894."

——, *editor.* Poems of Uhland, selected and edited by W. T. Hewett. New York, 1896. 16°. pp. lviii. + 352.

Hinman, E. L. [Review of] L'année philosophique. 4^e année, 1893. (Philosophical Review, May, 1895, vol. iv., p. 323.)

Hitchcock, E., jr. The physical condition of the American people. (Chautauquan, May, 1896, vol. xxiii., p. 151.)

—— The revival of the Olympian games. (Commercial Travelers' Home Magazine, April, May, 1896, vol. vi., pp. 385, 521.)]

Hopkins, G. S. Apparatus for illustrating the circulation of the lymph. (Transactions of the Amer. Microscopical Soc., 1895, vol. xvii., p. 336.)

—— The enteron of American ganoids. (Jour. of Morphology, Oct., 1895, vol. xi., p. 411.)

Also separately printed: "Thesis presented to the Faculty of Cornell University for the degree of Doctor of Science."

Hotchkiss, H. J., and F. E. Millis. A galvanometer for photographing alternating current curves. (Physical Review, July, 1895, vol. iii., p. 49.)

Also separately printed.

Howe, H. C. The builder of harmonies. (Cornell Era, 14 Dec., 1895, vol. xxviii., p. 121.)

—— Life. (Lotus, 1 May, 1896, vol. i., p. 303.)

—— Robin Farmerboy. (Jour. of Education, 4 June, 1896, vol. xliii., p. 379.)

—— Song. (Overland Monthly, April, 1896, vol. xxvii., p. 462.)

—— [Sonnet for Mr. Sage's birthday.] (Cornell Sun, 31 Jan., 1896, vol. xvi., no. 89.)

—— True to his colors. (Canadian Magazine, April, 1895.)

—— What we do at Cornell. (Little Chap., vol. i., p. 28.)

—— Withered roses. (Lotus, 15 April, 1896, vol. i., p. 273.)

Huffcut, E. W. Cases on the law of agency. Boston, 1896. 8°. pp. xvi. + 412.

—— Elements of the law of agency. Boston. 1895. 8°. pp. xlviii. + 249.

—— The relation of the Law School to the University; an address delivered before the Section of Legal Education of the American Bar Association at Detroit, Aug. 27, 1895. (Reports of the Amer. Bar Assoc., 1895, vol. xviii., p. 429.)

Also in proceedings of the Section of Legal Education, 1895, p. 87, and printed separately.

——, *editor*. Principles of the English law of contract, by Sir W. R. Anson. 8th ed. 1st American copyright ed., edited with American notes, by E. W. Huffcut. New York, 1895. 8°. pp. lxi. + 456.

Hull, C. H. Bibliography of Sir William Petty (1623–1687). (Notes and Queries, 31 Aug., 14 Sept., 1895, 8th series, vol. viii., pp. 163, 202).

—— Graunt or Petty? The authorship of the Observations upon the bills of mortality. (Political Science Quarterly, March, 1896, vol. xi., p. 105.)

—— [Review of] Eighth biennial report of the Illinois bureau of labor statistics. (Political Science Quarterly, March, 1896, vol. xi., p. 184.)

—— [Review of] Essays in taxation; by E. R. A. Seligman. (Amer. Historical Review, April, 1896, vol. i., p. 565.)

—— [Review of] The life of Sir William Petty; by Lord Edmund Fitzmaurice. (Annals of the Amer. Academy of Political and Social Science, Jan., 1896, vol. vii., p. 126.)

—— [Review of] Sir William Petty; a study in English economic literature by W. L. Bevan. (Political Science Quarterly, June, 1895, vol. x., p. 334.)

Irons, D. Descartes and modern theories of emotion. (Philosophical Review, May, 1895, vol. iv., p. 291.)

—— Recent developments in theories of emotion; discussion. (Psychological Review, May, 1895, vol. ii., p. 279.)

—— [Review of] Temperament et caractère selon les individus, les sexes et les races; par A. Fouillée. (Philosophical Review, March, 1896, vol. v., p. 189.)

Jacoby, H. S. Outlines of descriptive geometry. Ithaca, N. Y., 1896, 2 pts. 8°.

Contents:——i. On points, lines, and planes.——ii. On surfaces, tangents, intersections, and developments.

—— A text-book on plain lettering. New York, 1895, obl. 8°., pp. vii. + 82. 48 *plates* and 32 *figs*.

——, *joint author.* A text-book in roofs and bridges, by M. Merriman and H. S. Jacoby. Pt. i., 4th ed., revised and enlarged. N. Y., 1896, 8°., pp. viii. + 183. 105 *figs.*

Jenks, J. W. The guidance of public opinion. (Jour. of Sociology, Sept., 1895, vol. i., p. 158.)

—— Introduction to joint debate on free coinage of silver. (Jour. of Social Science, 1895, p. 5.)

—— Political party machinery in the United States. (Chautauquan, April, 1896, vol. xxiii., p. 23.)

—— The social basis of proportional representation. (Annals of the American Academy, Nov., 1895, vol. vi., p. 21.)

——, *editor.* Handbook of the American Economic Association, Baltimore, 1896. 8°.

——, *joint author.* Bill to establish a system of proportional representation in cities. (Proportional Representation Review, Dec., 1895, vol. iii., p. 26.)

Jones, G. W. A drill-book in trigonometry. Ithaca, N. Y., 1896. 12°. pp. xvi. + 192.

Keays, R. H., *joint author.* On the flow of water in branching pipes; by A. L. Colston and R. H. Keays, revised by R. H. Keays. (Transactions of the Association of Civil Engineers of Cornell University, 1896, vol. iv.)

Kortright, F. L. The integral function F(p c T)=0 in the equilibria of two-component two-phase systems; i. e., the physical theory of solutions. [Ithaca, N. Y., 1895.] 8°. pp. 24.

"Dissertation submitted to the Faculty of Cornell University for the Degree of Doctor of Science."

—— The heat of electrolytic dissociation of some acids. (Amer. Chemical Jour., May, 1896, vol. xviii., p. 365.)

—— *See also* **Trevor, J. E.** *and* **F. L. Kortright.** Laboratory note book for introductory chemistry.

Lodeman, E. G. The spraying of plants. New York, 1896, 16°. pp. xvii. + 399.

—— Dwarf apples. (Cornell University Agricultural Experiment Station. Bulletin, May, 1896, no. 116, p. 315.)

—— Forcing-house miscellanies. (*Same*, June, 1895, no. 96, p. 318.)

—— The freeze of May, 1895. (Fruit, June, 1896, vol. viii., p. 8.)

—— Poisoning from rhus. (Garden and Forest, 2 Oct., 1895, vol. viii., p. 398.)

—— The preparation of the Bordeaux mixture. (*Same*, 17 April, 1895, vol. viii., p. 159.)

—— Some of the latest results in spraying for harmful fungi. (Proceedings of the Amer. Pomological Soc., 1895, vol. xxiv., p. 26.)

—— Spray calendar. (Cornell University Agricultural Experiment Station. Bulletin, Feb., 1896, no. 114.)

—— Spraying. (Fruit, June, 1896, vol. viii., p. 8.)

—— The spraying of orchards. (Cornell University Agricultural Experiment Station. Bulletin, March, 1895, no. 86, p. 43.)

MacGillivray, A. P. The American species of isotoma. (Canadian Entomologist, Feb., 1896, vol. xxviii., p. 47.)

—— The American species of perineura. (*Same*, Jan., 1895, vol. xxvii., p. 7.)

—— Bee. (Johnson's universal cyclopædia. 1893. Vol. i., p. 555.)

—— Florida aphoruridæ. (Canadian Entomologist, June, 1894, vol. xxvi., p. 165.)

—— New Hampshire tenthredinidae. (*Same*, March, 1895, vol. xxvii., p. 77.)

—— New species of nothochrysa. (*Same*, June, 1894, vol. xxvi., p. 165.)

—— New species of tenthredinidae with tables of the species of strongylogaster and monoctenus. (*Same*, Nov., 1894, vol. xxvi., p. 324.)

—— New tenthredinidae. (*Same*, Oct., 1896, vol. xxvii., p. 281.)

—— North American thysanura. V. (*Same*, April, 1884, vol. xxvi., p. 105.)

MacMahon, J. Notes on the expression for a velocity potential in terms of functions of Laplace and Bessel. (Bulletin of the Amer. Mathematical Soc., March, 1896, vol. ii., p. 173.)

—— Partial linear transformations of ternary quantics and their concomitants [abstract.] (*Same*, Oct., 1895, vol. ii., p. 3.)

Read at the Springfield meeting of the Society, Aug., 1895

Macomber, I. J. Blasting in pole line construction. (Sibley Jour., April, 1896, vol. x., p. 304.)

Also separately printed.

Matthews, C. P. The alternating arc. (Proceedings of the Cornell Electrical Society, 1895-6, vol. iii., p. 44.)

Also Electric Power, June, 1896.

Merritt, E. G. On the absorption of certain crystals in the infra-red as dependent on the direction of the plane of polarization. (Physical review, May, 1895, vol. ii., p. 424.)

—— On the transmission of high frequency currents by wires and cables. (Proceedings of the Cornell Electrical Soc., 1895-6, vol. iii., p. 1.)

—— Some points in connection with the modern theory of primary batteries. (*Same*, 1894-5, vol. ii., p. 60.)

—— Thermodynamics. (Johnson's universal cyclopædia. 1895. Vol. viii., p. 109.)

—— Ueber den dichroismus von Kalkspath Quartz und Turmalin für ultrarothe Strahlen. (Annalen der Physik und Chemie, 1895, vol. lv., p. 49.)

——, *associate editor*. The physical review. May, 1895-May, 1896.

Nichols, E. L. The galvanometer; a series of lectures. New York, 1894, 8°. pp. 112. 77 *wdcts.*

—— August Kundt [a biographical notice]. (Physical Review, July, 1894, vol. ii., p. 68.)

—— The distribution of energy in the spectrum of the glow-lamp (preliminary measurements). (*Same*, Jan., 1895, vol. ii., p. 260.)

—— Hermann von Helmholtz [a biographical notice]. (*Same*, Nov., 1894, vol. ii., p. 222.)

—— How to look up references in physics. (Sibley Jour., Feb., 1896, vol. x., p. 212.)

—— A new form of spectrophotometer. (Physical Review, Sept., 1894, vol. ii., p. 138.)

—— The new physics laboratory at Lille. (*Same*, Nov., 1895, vol. iii., p. 232.)

—— [Review of] Electrical engineering formulæ; by W. Geipel and M. H. Kilgour. (*Same*, Sept., 1894, vol. ii., p. 159.)

—— [Review of] The Herschels and modern astronomy; by A. M. Clerke. (*Same*, Jan., 1896, vol. iii., p. 319.)

—— [Review of] Industrial photometry with special application of electric lighting; translated from the French of Palaz, by G. W. Patterson, jr., and M. R. Patterson. (*Same*, Jan., 1896, vol. iii., p. 317.)

—— [Review of] Die Oberflächen-oder Schillerfarben; Von B. Walter. (*Same*, Jan., 1896, vol. iii., p. 319.)

Nichols, E. L., *and Miss* **M. L. Crehore.** Studies of the lime light. (Physical Review, Nov., 1894, vol. ii., p. 161.)

Nichols, E. L., *and* **W. S. Franklin.** The elements of physics; a college text book. Vol. i. New York, 1896, 8°.

Contents: —— i. Mechanics and heat.

——On the condition of the ether surrounding a moving body. (Physical Review, May, 1894, vol. i., p. 426.)

Nichols, E. L., *and Miss* **M. C. Spencer.** The influence of temperature upon the transparency of solutions. (*Same*, March, 1895, vol. ii., p. 344.)

Nichols, E. L., *associate editor.* Johnson's universal cyclopædia. New ed. New York, 1893–95. 8v. 4°.

Professor Nichols is associate editor for the department of physics and has contributed many articles to the work.

Nichols, E. L., *translator.* A general theory of the glow-lamp, by H. S. Weber. (Physical review, Sept., 1894, vol. ii., p. 112.)

Ogden, H. N. The alignment of sewer pipe. (Engineering Record, 11 April, 1896, vol. xxxiii., p. 335.)

—— Economics of engineering public works. (Science, 25 Oct., 1895, N. S., vol. ii., p. 539.)

—— Intersection of two circular brick sewers, (Engineering News, 12 March, 1896, vol. xxxv., p. 163.)

Orndorff, W. R. A laboratory manual of organic chemistry. 2d ed., revised and enlarged. Boston, 1896. 8°.

—— Index to vol. xvii. of The American Chemical Journal. (Amer. Chemical Jour., Dec., 1895, vol. xvii., p. 801.)

—— [Review of] A laboratory manual of organic chemistry; by Dr. Lassar-Cohn, translated by A. Smith. (*Same*, March, 1896, vol. xviii., p. 261.)

Orndorff, W. R., *and* **C. L. Bliss.** Dianthranol a dihydroxyl derivative of dianthracene. (*Same*, June, 1896, vol. xviii., p. 453.)

Orndorff, W. R., *and* **F. K. Cameron.** A new apparatus for the determination of molecular weights by the boiling-point method. (*Same*, July, 1895, vol. xvii., p. 517.)

—— Paranthracene or dianthracene: a polymeric modification of anthracene. (*Same*, Nov., 1895, vol. xvii., p. 658.)

Orndorff, W. R., *and* **V. A. Howells.** The cis and trans modifications of benzene hexabromide. (*Same*, April, 1896, vol. xviii., p. 312.)

Orndorff, W. R., *and* **G. L. Terrasse.** The molecular weight of sulphur. (*Same*, March, 1896, vol. xviii., p. 173.)

Orton, J. F. Monetary standards. (Jour. of Political Economy, June, 1895, vol. iii., p. 338.)

Rhoades, L. A. [Review of] Emilia Galotti, Tragödie von G. E. Lessing. (Modern Language Notes, April, 1896, vol. xi., p. 120.)

Roberts, I. P. Annual report of the Cornell University Agricultural Experiment Station. 1894. Albany, 1895. 8°.

—— Soil depletion in respect to the care of fruit-trees. (Cornell University Agricultural Station. Bulletin, Oct., 1895, no. 103, p. 533.)

—— Articles in the Cultivator and Country Gentleman, June, 1895–Jan., 1896, vol. lx., lxi.:

Preserving a wooden silo, 6 June, p. 440; Killing a bad weed, 18 July, p. 536; Grasshoppers becoming a scourge, 1 Aug., p. 567; About building a silo, 8 Aug., p. 579; A permanent pasture, — Clover running out, 22 Aug., p. 611; Clover, — gravelly knolls, 5 Sept., p. 643; Composition of night soil, 17 Oct., p. 747; Diagnosis of the causes which have led to decline in price of farm products, 23 Jan., p. 63; Sacaline, 30 Jan., p. 90.

—— Articles in the Rural New Yorker, April, 1895–June, 1896, vol. liv., lv.:

Alkali soil in Indiana, 13 April, p. 26; Wisdom of a summer fallow, 20 April, p. 280; More about feeding millet, 27 April, p. 297; Something about lightning rods, 25 May, p. 361; Grass seeding with buckwheat, 15 June, p. 409; Better culture and nitrogen, 22 June, p. 434; Metal roofs and cement floors, 6 July, p. 447; Pipe that won't work, 6 July, p. 447; Conditions of success: a new grass, 20 July, p. 486; To start grass on thin land, 31 Aug., p. 584; Stock water without wells, 7 Sept., p. 601; What shall I use for power? — Feeding buckwheat to horses, 26 Oct., p. 712, 713; Chickory as a farm crop, 2 Nov., p. 729; Second-growth clover: stalks without ears, 28 Dec., p. 857; Will it pay to steam fodder? — A ration for fattening lambs, 25 Jan., p. 53; Sandstone for a stable floor, 8 Feb., p. 85; Cost of a cement floor, — When to haul out manure, 15 Feb., p. 100; Dairy cattle in Mexico, — Making a pasture in Vermont, — How to seed knolls, — Start for a permanent pasture, 22 Feb., p. 117; Grasses for a dairy farm, — How to sow peas and oats, — Bad water in a well, 7 March, p. 157; Grasses for spring seeding, — English rye grass for pasture, 17 March, pp. 178, 179; Keep changing the food, 28 March, p. 228; Moldy ensilage, — Oats better than spring rye, — What crop for a pond bottom? 4 April, pp. 237, 238; Clover and trees on clay soil, 25 April, p. 287; Grass mixtures for pastures,— Steel axles or pipe boxes for wagons, — Hulled oats for seed, 23 May, p. 353; Clover must have moisture, 6 June, p. 384; To seed an old meadow, — To kill willows and woodchucks, 13 June, p. 401.

Rowlee, W. W. The chlorophyll bodies of chara coronata. (Transactions of the Amer. Microscopical Society, 1895, vol. xvii., p. 155.)

—— Is publication of botanical and zoological papers in microscopical journals justifiable? (Botanical Gazette, March, 1896, vol. xxi., p. 178.)

Rowlee, W. W., *and Miss* **M. A. Nichols.** Contributions to the life history of symplocarpus fœtidus. (Transactions of the American Microscopical Society, 1895, vol. xvii., p. 157.)

Rowlee, W. W., *and* **K. M. Wiegand.** Salix candida Willd. and its hybrids. (Bulletin of the Torrey Botanical Club, May, 1896, vol. xxiii., p. 194.)

Ryan, H. J. Discussion of armature reaction. (Transactions of the Amer. Institute of Electrical Engineers, April, 1895, vol. xii., p. 234.)

—— Electric power for railroads. (Sibley Jour., Jan., 1896, vol. x., p. 143.)

—— Improvements in armature ventilation. (*Same*, April, 1895, vol. ix., p. 269.)

—— Recent generator design, using pole face windings. (Proceedings of the Electrical Society of Cornell University, 1895–6, vol. iii., p.56.)

—— [Review of] Polyphase electric currents and alternate current motors; by S. P. Thompson. (Physical Review, Jan., 1896, vol. iii., p. 316.)

Schiller, F. C. S. Lotze's monism. (Philosophical Review, May, 1896, vol. v., p. 226.)

—— Non-Euclidian geometry and the Kantian a priori. (*Same*, March, 1896, vol. v. p. 173.)

—— [Review of] Biological lectures delivered at the Marine Biological Laboratory of Wood's Holl in the summer session of 1894. (*Same*, Jan., 1896, vol. vi., p. 73.)

——, [Review of] A critical account of the doctrine of Lotze; by H. S. Jones. (*Same*, July, 1895, vol. iv., p. 435.)

—— [Review of] Degeneration; von M. Nordau. (New World, June, 1896, vol. v.)

—— [Review of] Logik und System der Wissenschaften; von L. Rabus. (Philosophical Review, Dec., 1895, vol. iv., p. 661.)

—— [Review of] Mind and motion and monism; by G. J. Romanes. (*Same*, Jan., 1896, vol. v., p. 93.)

Schurman, J. G. Agnosticism and religion. New York, 1896. 16°. pp. (3) + 181.

—— Cornell University: 3d annual report of President Schurman, 1894–5. Ithaca, N. Y., 1895. 8°. pp. 130.

—— Agnosticism. (Philosophical Review, May, 1895, vol. iv., p. 241.)

—— The rebound from agnosticism: Mr. Balfour's book. (Forum, May, 1895, vol. xix., p. 364.)

—— Teaching,—a trade or a profession? (*Same*, April, 1896, vol. xxi., p. 171.)

From an address delivered before the National Education Association, Department of Superintendence, at Jacksonville, Florida.

—— [Review of] Comte, Mill, and Spencer, an outline of philosophy; by J. Watson. (Philosophical Review, May, 1895, vol. iv., p. 213.)

—— [Review of] The conception of God; published by the Philosophical Union of the University of California. (*Same*, March, 1896, vol. v., p. 213.)

——, *editor*. The Philosophical Review. May, 1895–May, 1896.

Sharp, C. H. The effective centre of light from a standard photometric burner. (Electrical World, 11 Jan., 1896, vol. xxvii., p. 54.)

—— A method for the use of standard candles in photometry. (Physical Review, May, 1896, vol. iii., p. 458.)

Slingerland, M. V. The cigar-case-bearer in Western New York. (Cornell University Agricultural Experiment Station. Bulletin, May, 1895, no. 93, p. 215.)

—— Climbing cut-worms in Western New York. (*Same*, Nov., 1895, no. 104, p. 555.)

—— Feltia subgothica Haworth, or, agrotis (subgenagronoma) jaculifera Guenée, which? (Canadian Entomologist, Nov., 1895, vol. xxvii., p. 301.)

—— An important new book: A manual for the study of insects, by J. H. Comstock and A. B. Comstock. (Ithaca Jour., 9 April, 1895.)

—— The life story of a worm. (Rural New Yorker, 27 July, 1895, vol. liv., p. 582.)

—— The magnolia-blossom tortricid. (Entomological News, June, 1895, vol. vi., p. 175.)

—— Notes on injurious insects: answers to correspondents [100 articles]. (Rural New Yorker, April, 1895–June, 1896, vol. liv., lv.; Owego Daily Palladium, 1 June, 1895; Waverly Free Press, 21 Sept., 1895; Amer. Agriculturalist, 5 Oct., 1895, vol. lvi., p. 285.)

—— The pear psylla and the New York plum scale. (Cornell University Agricultural Experiment Station. Bulletin, Jan., 1896, no. 107, p. 37.)

—— The plum-twig gall-mite. (Canadian Entomologist, Dec., 1895, vol. xxvii., p. 329.)

—— Report, as chairman of committee on entomology. (Proceedings of the Western Horticultural Society, 1896, vol. xli., p. 18.)

—— Winter work among fruit insects. (Amer. Agriculturalist, 18 January., vol. lvii., p. 58.)

Reprinted in Garden and Forest, 22 Jan., 1896.

—— Wireworms and the bud moth. (Cornell University Agricultural Experiment Station. Bulletin, Jan., 1896, no. 107, p. 37.)

Snyder, V. Ueber die linearen Complexe der Lie'schen Kugelgeometrie. Göttingen, 1895. 8°. p. 47 + (1). *Figs.*

Spalding, F. P. Cement testing [discussion.] (Transactions of the Canadian Society of Civil Engineers, 1895, vol. ix.)

—— Comparative economy of cements [letter to the editor.] (Engineering News, 30 May, 1895, vol. xxxiii., p. 363.)

—— The discharge of the Mississippi River [discussion.] (Transactions of the American Society of Civil Engineers, 1896, vol. xxxv., p. 305.)

Stephens, H. M. Revolutionary Europe, 1789–1815; 3d edition of "Europe, 1789–1815," in "Periods of European history." London, 1896. 8°. p. xvi.+424.

—— Syllabus of a course of thirty lectnres on the history of Europe during the seventeenth century. Ithaca, N. Y., 1894, 8°. p. 92.

—— Syllabus of a course of thirty lectures on the history of Europe during the eighteenth century. Ithaca, N. Y., 1895.

—— Syllabus of a course of twenty-four lectures on the history of Europe during the nineteenth century. Ithaca, N. Y., 1895. 8°. p. 101.

—— Syllabus of a course of fifty lectures on the history of the French Revolution. Ithaca, N. Y., 1894–95. 8°. p. 79.

—— Daniel Defoe. (Book Reviews, March, 1896, vol. iii., p. 303.)

—— The French Revolution: the work of the committee of legislation and public instruction in the Convention. (Yale Review, Nov., 1895, vol. iv., p. 305.)

—— Oxford and Cambridge. (Cornell Magazine, Nov., 1894, vol. vii., p. 41.)

—— Recent memoirs of the French Directory. (American Historical Review, April, 1896, vol. i., p. 473.)

—— The volunteer corps of the English Universities. (Cornell Magazine, Nov., 1895, vol. viii., p. 47.)

—— With Thomas Ingoldsby in Kent. (Temple Bar, Sept., 1895, p. 89.)

—— [Review of] Advanced history of England, by C. Ransome; History of England, by C. Oman. (Amer. Historical Review, Jan., 1896, vol. i., p. 319.)

—— [Review of] The historical development of the jury system; by M. A. Lesser. (N. Y. Law Review, May, 1895, vol. i., p. 225.)

—— [Review of] Life and letters of Edward A. Freeman; by W. R. W. Stephens. (Annals of the Amer. Academy of Political and Social Science, Jan., 1896, vol. vii., p. 113.)

—— [Review of] The meaning of history, and other historical pieces; by F. Harrison. (Political Science Quarterly, June, 1895, vol. x., p. 352.)

—— [Review of] Memoirs of Barras. (N. Y. Mail and Express, 15 June, 1895.)

—— [Review of] Private life of Warren Hastings; by Sir Charles Lawson. (Amer. Historical Review, Jan., 1896, vol. i., p. 341.)

—— *associate editor.* American historical review. Vol. i., no 1–3, Oct., 1895–April, 1896. New York, 1895–96. 3nos. l. 8°.

Stroud, B. B. The mammalian cerebellum. Pt. 1: the development of the cerebellum in man and the cat. (Jour. of Comparative Neurology, July, 1895, vol. v., p. 71.)

Also, separately: A thesis presented to the Faculty of Cornell University for the degree of Doctor of Science.

—— On the anatomy of the anus. (Annals of Surgery, 1896, vol. xxiv., p. 1.)

Strunk, W., *jr.* Goldsmith's good-natured man. (Cornell Era, 1 Feb., 1896, vol. xxviii., p. 169.)

——, *editor.* Macaulay's and Carlyle's Essays on Samuel Johnson; edited, with introduction and notes, by W. Strunk, jr. 2d ed. New York, 1896. 16°. pp. 40+192. *Port.* (English reading series.)

Tarr, R. S. Economic geology of the United States. 2d ed., revised. New York, 1895. 8°. pp. xx.+525. *Frontisp.*, 2 *tables*, and *figs.*

—— Elementary physical geography. New York, 1895. 8°. pp. xxxi.+488. *Plates*, *charts*, and 267 *figs.*

—— Same. 2d ed., revised. 1896.

—— College entrance requirements in science. (Educational Review, June, 1896, vol. xii., p. 57.)

—— Geography in the University. (Book Reviews, May, 1896. vol. iv., p. 1.)

—— Geological history of the Chautauqua grape belt. (Cornell University Agricultural Experiment Station. Bulletin, Jan., 1896, no. 109, p. 87.)

—— Laboratory methods of instruction in geology and physical geography. (New York State University. Regents' Bulletin, July, 1895, no. 32, p. 992.)

—— A query concerning the origin of atolls. (Nature, 4 June, 1896, vol. liv., p. 101.)

—— The teacher's outfit in physical geography. (School Review, March, 1896, vol. iv., p. 161.)

—— [Review of] Geological biology; by H. S. Williams. (Educational Review, March, 1896, vol. xi., p. 293.)

—— [Review of] Major Rennell and the rise of modern English geography; by C. R. Markham. (School Review, Oct., 1895, vol. iii., p. 512.)

——, *reviser.* New York supplement to Butler's and Warren's geography. Philadelphia, 1896.

Thurston, R. H. Manual of the steam engine. 3d ed. Vol. i. New York, 1896. 8°.

—— Materials of construction. 6th ed. New York, 1895. 8°. pp. xviii.+715.

—— America's future. (International Trade, Jan., 1896, p. 286.)

—— The condition of the U. S. N. Engineer Corps. (Public Ledger, Phil., 30 Nov., 1895.)

—— Cornell University requirements. (Amer. Machinist, 7 March, 1896, vol. xxxii.)

—— Cut and wire nails. (Transactions of the Amer. Soc. of Mechanical Engineers, 1895, vol. xvii., p. 1013.)

—— Education of mechanical engineers: aim and scope of engineering colleges. (Engineering Magazine, Dec.. 1895, vol. x., p. 418.)

—— Efficiency of boilers. (Transactions of the Amer. Soc. of Mechanical Engineers, 1895, vol. xvii., p. 971.)

—— The engineering experiment station of Sibley College at Cornell University. (Sibley Jour., April, 1896, vol. x., p. 269.)

—— The evolution of the fittest education. (Cassier's Magazine, March, 1896, vol. ix., p. 472.)

—— Evolution of the high speed engine. (Electricity, 6 May, 1896.)

—— F. E. Sickles. (Engineering Record, 30 March, 1895.)

—— Governing by compression. (Transactions of the Amer. Soc. of Mechanical Engineers, 1895, vol. xvii., p. 443.)

—— Magnetism as a constructive material. (Machinery, May, 1896.)

—— The method of initial condensation and heat-wastes in steam-engine cylinders. (Transactions of the Institution of Naval Architects, April, 1895, vol. xxxvi., p. 248.)

Abstract in Sibley Jour., Nov., 1895, vol. x., p. 63.

—— Miltonian teaching. (Scientific Amer. Supplement, 16 Nov., 1895, vol. xl., p. 16580.)

—— A new coal calorimeter [discussion]. (Transactions of the Amer. Soc. of Mechanical Engineers, 1895, vol. xvii., p. 1056.)

—— New Porter engine. (*Same*, 1895, vol. xvii., p. 153.)

—— Our debt to inventors : shall we discourage them? (Forum, May, 1895, vol. xix., p. 356.)

—— Le record de consommation des machines à vapeur [Abstract, by V. Dwelshauvers-Dery]. (Revue Générale des Sciences, 1895, pp. 497, 832.)

—— *Same. English.* The record in steam consumption [translated by M. C. Rorty]. (Sibley Jour., Jan., 1896, vol. x., p. 173.)

—— Sibley College ; an historical sketch. (University Magazine, Feb., 1896.)

—— Steam engine economy. (Transactions of the Institution of Civil Engineers, 19 March, 1895, vol. cxxii., p. 44.)

——Steam engine regulation. (*Same*, 5 Feb., 1895, vol. cxx., p. 271.)

—— Trend of national progress. (North Amer. Review, Sept., 1895, vol. clxi., p. 297.)

—— *Same. French.* La marche et progrès aux Etats Unis montrée par des courbes; translated with notes by V. Dwelshauvers-Dery. (L' Industrie, Jan., 1896.)

—— Trials of compound engines. (Transactions of the Amer. Soc. of Mechanical Engineers, 1895, vol. xvii., p. 183.)

—— Water in steam pipes. (Scientific Amer., 13 April, vol. lxxii., p. 230.)

——, *associate editor.* Johnson's universal cyclopædia. New ed. New York, 1893–95. 8v. 4°.

Professor Thurston is associate editor for the department of Mechanical Science, and has contributed many articles to the work.

Titchener, E. B. Experimental psychology. (Medical Record, 27 July, 1895, vol. xlviii., p. 111.)

—— Psychology. (Science, 19 April, 1895, N. S., vol. i., p. 426.)

—— A psychophysical vocabulary. (Amer. Jour. of Psychology, Oct., 1895, vol. vii., p. 78.)

—— The type-theory of the simple reaction. (Mind, Oct., 1895, April, 1896, vol. iv., p. 506, v., p. 236.)

—— [Review of] L' année psychologique. 1e année, 1894. (Philosophical Review, Sept., 1895, vol. iv., p. 549.)

—— [Review of] Entwurf zu einer physiologischen Erklaerung der psychischen erscheinungen; von S. Exner. (Brain, 1895, pt. lxxii., p. 571.)

—— [Review of] Philosophy of mind; by G. T. Ladd. (Mind, July, 1895, N. S. vol. iv., p. 396.)

—— [Review of] Die Urtheils-function; von W. Jerusalem. (Amer. Jour. of Psychology, April, 1896, vol. vii., p. 432.)

—— Side-paths of psychology [reviews]. (Dial, 1 June, 1895, vol. xviii., p. 324.)

—— Some recent psychophysical literature [reviews]. (Brain, 1895, pt. lxx., lxxi., p. 391.)

——, *assistant editor.* The American journal of psychology. Oct., 1895–April, 1896.

——, *associate editor.* Mind; a quarterly review of psychology and philosophy. April, 1895–April, 1896.

——, *editor.* Cornell University psychological bulletins:

x. Ueber den Einfluss der Gesichtsassociationen auf die Raumwahrnehmungen der Haut, by M. F. Washburn. Leipzig, 1895. 8°. pp. 60.

xi. On the affective tone of simple sense impressions, by D. R. Major. (Amer. Jour. of Psychology, Oct., 1895, vol. vii., p. 57.)

xii. Some questions of the cutaneous sensibility, by W. B. Pillsbury. (*Same*, p. 42.)

——, *translator.* Outlines of psychology, by O. Kuelpe. London, 1895, 8°. pp. xi. + 462.

Trevor, J. E. Problems for chemistry. Course 1. Ithaca, 1895. 8°.

—— The law of mass action. (Amer. Chemical Jour., May, 1895, vol. xvii., p. 372.)

—— [Review of] Electrochemie, ihre Geschichte und Lehre; von W. Ostwald. (*Same*, April, 1896, vol. xviii., p. 341.)

—— [Review of] Grundzüge der mathematischen chemie.; von G. Helm. (*Same*, March, 1895, vol. xvii., p. 200.)

—— [Review of] A laboratory manual of organic chemistry; by Dr. Lassar-Cohn. (*Same*, March, 1896, vol. xviii., p. 260.)

—— [Review of] Die Lehre von der Elektrizitaet; von G. Wiedemann. (*Same*, March, 1896, vol. xviii., p. 259.)

—— [Review of] Oswald's Klassiker der exakten Wissenschaften, no. 40, 42, 44, 45, 52, 58, 63, 66, 68–70, 72, 74. (*Same*, 1895–96, vol. xvii., p. 629, vol. xviii., pp. 259, 426.)

—— [Review of] Physikalisch-chemische Propaedeutik; von H. Griesbach. (*Same*, March, 1896, vol. xviii., p. 260.)

——, *and* F. L. Kortright. Laboratory note book for introductory chemistry. Ithaca, N. Y., 1895. 8°.

Tyler, C. M. Ethics of suicide. (Cornell Era, 6 April, 1895, vol. xxvii., p. 253.)

—— The Gettysburg speech [of Lincoln; letter to the editor]. (Nation, 28 Nov., 1895, vol. lxi., p. 387.)

—— [Review of] History of religion; by A. Menzies. (Philosophical Review, Jan., 1896, vol. 5., p. 69.)

—— [Review of] Religions of India; by E. W. Hopkins. (*Same*, p. 71.)

Tyler, M. C. The party of the Loyalists in the American revolution. (American Historical Review, Oct., 1895, vol. i., p. 24.)

Wiegand, K. M. Intercellular spaces in the embryos of erechthites hieracifolia and bicleus cernua. (Transactions of the Amer. Microscopical Soc., 1896, vol. xvii., p. 174.)

—— The structure of the fruit in the order ranunculaceæ. (Proceedings of the Amer. Microscopical Society, 1895, vol. xvi., p. 69.)

—— *See also* **Rowlee, W. W.,** *and* **K. M. Wiegand.** Salix candida.

Wilder, B. G. Physiology practicums; explicit directions for examining portions of the cat and the heart, eye, and brain of the sheep as an aid in the study of elementary physiology. 2d ed., revised. [Ithaca, N. Y.] 1895. 8°.

—— The cerebral fissures of two philosophers: Chauncey Wright, James Edward Oliver. (Transactions of the Amer. Neurological Assoc., 1895, p. 203.)

Also in the Jour, of Comparative Neurology, July, 1895, vol. v., p. 124.

—— A decerebrized frog. (Records of the Assoc. of Amer. Anatomists, 1894, p. 30.)

Also in the Transactions of the N. Y. State Medical Society, 1895, p. 194.

—— The frog was not brainless but decerebrized [letter to the editor.] (Science, 7 June, 1895, N. S. vol. i., p. 23.)

—— High School reminiscences [5 articles.] (Sagamore [Brookline, Mass.], 1896, vol. i., pp. 45, 76, 116, 152; vol. ii., p. 20.)

—— A matter of terms [letter to the editor.] (N. Y. Medical Journal, 11 April, 1896, vol. lxiii., p. 489.)

—— Note on the teaching of large classes. (Records of the Amer. Soc. of Naturalists, vol. ii., p. 33.)

Also in Science, 28 Feb., 1896, N. S. vol. iii., p. 298.

—— "Pontine," or "pontile"? [Letter to the editor.] (N. Y. Medical Record, 6 June, 1896, vol. xlix., p. 823.)

—— The progress of paronymy [letter to the editor.] (Science, 10 May, 1895, vol. xxiii., p. 515.)

—— Some Brookline boys in the middle of the century [3 articles]. (Sagamore, vol. ii., pp. 177, 222, 266.)

—— The treatment of insane criminals [discussion.] Transactions of the N. Y. State Medical Society, 1895, p. 242.)

—— The University museum of vertebrates. (Proceedings of the Amer. Microscopical Soc., 1895, vol. xvii., p. 48.)

Also in Ithaca Jour., 21 Aug., 1895.

—— Vivisection and the treatment of cats at Cornell [letters to the editor.] Jour. of Zoophily, March, April, 1896, vol. v., pp. 29, 39.)

Willcox, W. F. The decrease of interstate migration. (Political Science Quarterly, Dec., 1895, vol. x., p. 603.)

—— The density of population in the United States in 1890. (Handbook of Amer. Economic Assoc., 1896, p. 115.)

Abstract of paper presented at the 8th annual meeting of the Amer. Economic Assoc.

—— Distribution of sexes in the United States. (Amer. Jour. of Sociology, May, 1896, vol. i., p. 725.)

Also printed separately.

—— [Review of] La logique sociale ; par G. Tard. (Philosophical Review, May, 1896, vol. v., p. 328.)

—— [Review of] Statistics and sociology ; by R. Mayo-Smith. (Educational Review, Jan., 1896, vol. xi., p. 88.)

—— [Review of] Le transformisme social ; par G. de Greef. (Philosophical Review, May, 1896, vol. v., p. 327.)

Williams, H. D. The hydroplane. (Sibley Jour., Nov., 1895, vol. x., p. 81.)

—— A new method of governing water-wheels. (*Same*, March, 1895, vol. x., p. 229.)

Williams, S. G. The Committee of Fifteen on correlation of studies. (Proceedings of the N. Y. State Teachers' Assoc. 1895, p. 56.)

Wing, H. H. On the effect of feeding fat to cows. (Cornell University Agricultural Experiment Station. Bulletin, May, 1895, no. 92, p. 197.)

—— Shorthorns. (Johnson's Universal Cyclopædia, 1895, vol. vii., p. 506.)

—— Tests of cream separators. (Cornell University Agricultural Experiment Station. Bulletin, Dec., 1895, no. 105, p. 605.)

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1896-97

Dup, Exch. Drew Theol. Sem. Jan. 23 - 1901

CORNELL UNIVERSITY

FIFTH
ANNUAL REPORT
OF
PRESIDENT SCHURMAN

1896-97

WITH APPENDICES CONTAINING REPORTS OF THE DEANS
AND DIRECTORS OF THE VARIOUS DEPARTMENTS
AND COLLEGES, THE REGISTRAR, LIBRARIAN, ETC.

ITHACA, N. Y.
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PRESIDENT'S REPORT

FOR 1896-97

To the Board of Trustees:

The President of the University has the honor to submit the following Report for the year 1896–97. The Report covers period from September 1, 1896, to September 20, 1897,— n a new academic year began.

TRUSTEES

The University has suffered a heavy and irreparable loss he death of its best friend and most generous benefactor, Honorable Henry W. Sage, Chairman of the Board of stees, who passed away peacefully on Friday, September near the hour of midnight, in the 84th year of his age. A ial meeting of the Board was convened for the 20th, when Trustees attended the funeral in a body. The following ute was adopted by the Board, and as it expresses fully the iments of the President, he desires to make it a part of this ort:

"*The Board of Trustees have learned with deep sorrow of the death of their venerable and venerated Chairman, and they desire to convey to the members of his family the assurance of their sympathy with them in their great bereavement.*

The lifelong friend of the Founder of Cornell University, Mr. Sage became a Trustee on June 30, 1870, and on June 16, 1875, he was elected to succeed the Founder in the Chairmanship of the Board of Trustees. At that time he was resident in Brooklyn,

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but in 1880 he removed to Ithaca—the home of his boyhood and early manhood—where with ever-increasing delight in the beauty of the scenery he spent the remaining years of his life. He had thus for seventeen years been locally associated and for twenty-seven years officially connected with Cornell University. And the record of his labors and services and gifts to the University during that period constitutes a chapter which will long be remembered in the history of higher education in this country.

It is impossible for anyone who has not seen Mr. Sage, day after day, year in and year out, driving about the campus, while he directed the erection of buildings, the laying out of grounds, and the innumerable and multifarious details of repairs and alterations, to form any just conception of the enormous amount of work which the material face of the University, as we see it to-day, owes to his skilled and experienced hand. At the same time he kept himself as thoroughly conversant with the financial condition and operations of the institution as with his own personal business, and in large part he bore the responsibility of financial management and control. Nor was he, man of affairs though he was, unacquainted with the needs and aspirations of the various departments of instruction, whose heads always found in him an intelligent, a sympathetic, and a helpful patron.

The objects of Mr. Sage's benefactions coincide with the supreme ends of civilisation. Sage College is the embodiment of the ideal of JUSTICE TO WOMANKIND, *which few of the most progressive races have yet succeeded in realizing. To* TRUTH, *to* BEAUTY, *and to* GOODNESS, *he has erected enduring monuments in the Sage School of Philosophy, the Museum of Casts, and that Chapel which the piety of his wife first suggested to his willing mind. But while Mr. Sage was preeminently devoted to those highest spiritual ends and fostered with peculiar care the departments most directly charged with them, his wide intelligence and comprehensive sympathies embraced the University in the entirety of its ends, functions, and appointments. While his total gifts aggregated $1,175,290.79, more than half of that sum was devoted to the Library building and endowment, which is, as he meant it to be, the radiating centre of the* INTELLECTUAL LIFE *of the University.*

Greater even than his gifts was the boon which Mr. Sage conferred by his management of the lands which the foresight of the

Founder had saved for his University. It seems more than accidental, we may in all reverence describe it as providential, that while in all the States of the Union only one man—Ezra Cornell of New York—had the prescience to foresee the eventual appreciation of the value of the lands granted by Congress for educational purposes, and at the same time the wisdom to devise the means for husbanding them, in this State also, among his friends, in the person of his successor as Chairman of the Board, there was a man whose training and experience, whose imagination and judgment, qualified him to realize for the University out of that landed estate more than even the Founder ever dreamed of.

By his services and donations Mr. Sage has writ his name large in the history of Cornell University. They entitle him to perpetual recollection as our Second Founder. And they will often be recalled by the generations who follow us as they continue to enjoy the fruits of this benefactor's liberal sowing. But we over whom Mr. Sage presided in this Board, and all who knew him personally, cannot help feeling that more precious even than his gifts and labors was the spirit in which he performed them,—the absolute disinterestedness of the man unalloyed by any taint of self-seeking or egotism, his deep and solemn sense of duty, the breadth and tenderness of his sympathies, his unquenchable hopefulness, his piety, his faith in the moral and intellectual progress of mankind, his earnest and effectual interest in the cause of education, and his love and devotion to this University as a great and beneficent agency for promoting the highest ends of civilisation and the best welfare of the Republic. In this spirit of our departed friend, and in all the noble qualities of his heart and mind and character, he has left us a heritage of priceless worth as a model and exemplar for successive generations of Cornellians."

The Trustees also mourn the loss by death of another colleague, Colonel George Bliss, of New York City. Though Colonel Bliss had been in the Board only about a year, he showed much interest in the welfare of the University; and his genial presence and wise counsel will be greatly missed by his fellow Trustees.

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Through the action of the President of the United States, the University loses for the time being the services of two of the oldest and most faithful members of the Board of Trustees.

Andrew D. White, LL.D., the first President of the University, and Stewart L. Woodford, LL.D., who as Lieutenant-Governor of New York represented the State at the opening of the University, have with the general and cordial approval of their fellow citizens been sent to foreign courts as diplomatic representatives of their country, the one as Ambassador to Germany and the other as Minister to Spain.

Vacancies in the Board were filled as follows:

SAMUEL D. HALLIDAY, elected by the Board, succeeded Samuel D. Halliday, term expired, June 16, 1897.

HENRY W. SAGE, elected by the Board, succeeded Henry W. Sage, term expired, June 16, 1897.

GEORGE B. TURNER, elected by the Alumni, succeeded George B. Turner, term expired, June 16, 1897.

MYNDERSE VAN CLEEF, elected by the Board, succeeded Mynderse Van Cleef, term expired, June 16, 1897.

FRANK S. WASHBURN, elected by the Alumni, succeeded Frank S. Washburn, term expired, June 16, 1897.

ROBERT H. TREMAN, elected by the Board, succeeded Robert H. Treman, term expired, June 16, 1897.

THE FACULTIES

The reorganization of the faculties, as described in last year's Report (pp. 33–38), went into operation at the opening of the year under review. The experience of the year has fully vindicated the wisdom of the change, and happily disclosed the groundlessness of the anxiety with which even the most hopeful advocates of the measure contemplated its initiation. The greatest danger was that of conflict of jurisdiction between the special faculties and the University Faculty; but, through the good sense of all parties, perfect harmony has been maintained, and a number of precedents have been established which in great measure settle definitively issues which, if raised captiously or even abstractly, might have proved a source of no little vexation and disturbance. The members of the instructing staff are unanimous and enthusiastic in their approbation of the new system, and often express wonder that the old was tolerated so long. The chief excellencies of the present organization are that each faculty deals with its own students, and with no others, and that, as a consequence, while the work is more efficiently done, no professor is called upon to give to faculty meetings more than a quarter of the time which was necessary under the cumbrous machinery previously in operation.

In March last, Professor Babcock resigned his office as director of the College of Architecture and professor of architecture. Professor Babcock became a member of the faculty in 1871, three years after the University opened. During all this time he has labored with zeal, diligence, and wisdom to build up a strong department of architecture at Cornell; and although he has often been crowded for space, and restricted in equipment, and supported by too small a staff, he succeeded in placing his department on a firm foundation and in developing it to such proportions that the Board last year raised it to the rank of a college. As a member of the faculty, Professor Babcock was a wise counselor and a pungent critic, and the solidity of his character gave emphasis to his remarks, which were always exceedingly brief. To the retirement which he has so justly earned he will carry the high esteem and appreciation of all his colleagues. In accepting his resignation, the Board of Trustees, to show the high regard in which they held Professor Babcock, besides making other appropriate arrangements, elected him professor of architecture *emeritus*.

The grade of associate professor having been abolished, the Board transformed some of the associate professorships into full professorships and others into assistant professorships, and others again they allowed to lapse. The following paragraphs indicate the promotions thus ensuing, as well as the other appointments to professorships and assistant professorships during the year:

George Prentice Bristol, hitherto associate professor, was appointed professor of Greek (the appointment to take effect August 1, 1898). Mr. Bristol was born in Clinton, New York, June 21, 1856. He graduated A.B. from Hamilton College in 1876, with first honors in classics, and in 1893 received A.M. from the same institution. During 1877–79, he taught Greek and Latin in the Delaware Literary Institute, Franklin, New York.

During the year following, he studied Greek with Professor Gildersleeve at the Johns Hopkins University. He then studied Greek and comparative philology at Leipzig and Heidelberg for two years. 1882–83 he spent as assistant professor of Greek and German at Hamilton College, and 1883–88 as assistant professor of Greek. In 1888 he was appointed assistant professor of Greek in Cornell University, and in 1890 associate professor. He has from time to time contributed articles and reviews to philological and educational journals, and has published Selected Orations of Lysias.

Walter Francis Willcox, hitherto associate professor, was appointed professor of social science and statistics (the appointment to take effect August 1, 1898). Mr. Willcox was born in eastern Massachusetts in 1861. He prepared for college at Phillips Academy, Andover, and was graduated with honors from Amherst College in 1884. During a part of the following year he was instructor in Latin at his Alma Mater, but resigned at the close to prosecute his studies in other fields. Between 1885 and 1887, he worked in the schools of law and political science at Columbia College. At the beginning of his second year there, he received from the college a fellowship in political science, and, at its close, the degree of LL.B. At the same time he was admitted to the bar in New York City. Preferring teaching to the practice of his profession, he returned to Amherst College for a year as lecturer on law and instructor in philosophy. Thence he went to Yale for a year of graduate work in philosophy and theology, and ended his career as a matriculated student with a year in the University of Berlin. His doctor's thesis,—The Divorce Problem, A Study in Statistics,—was presented to the faculty of the school of political science at Columbia College soon after his return, and published under their editorial supervision in 1891. In the spring of 1891 he was appointed instructor in philosophy in Cornell University. In 1892, he was appointed assistant professor of social science and statistics in this University, and in 1894 associate professor. Aside from a number of reviews of ethical and sociological books, contributed mainly to the Philosophical Review, his published articles have been almost exclusively statistical, treating of the birth-rate, marriage-rate, divorce-

rate, rate of migration, etc., in this country or its parts. They are being worked over, with new material, into a book on the Social Statistics of the United States, the introductory chapters of which have just been published by the American Economic Association. Mr. Willcox is a member of the American Social Science Association, and of the publication committee of the American Statistical Association, advising editor of the American Journal of Sociology, and secretary of the American Economic Association.

Louis Munroe Dennis, hitherto associate professor, was appointed professor of analytical chemistry (the appointment to take effect August 1, 1900). Mr. Dennis was born in Chicago in 1863. Having obtained his preliminary education in the schools of that city, he entered, in 1881, the University of Michigan, where he graduated four years later with the degree of Ph.B. He continued his studies in that university during the year 1885–86, and took the degree of B.S. in Chemistry, holding a position as assistant in chemistry during the year. The next two years he spent as instructor in chemistry in Cornell University; 1889–91 he spent studying in Germany, under Fresenius at Wiesbaden, Krüss at Munich, Classen at Aachen, and Hempel at Dresden. In 1891 he was appointed assistant professor of analytical chemistry in Cornell University, and in 1893 associate professor. He is a member of the American Chemical Society, and fellow of the American Association for the Advancement of Science. With Mr. S. B. Newbury, he published a pamphlet on Chemical Problems, and he is the translator of Hempel's Methods of Gas Analysis. Mr. Dennis has also published from time to time, in the Journal of the American Chemical Society, American Chemical Journal, Berichte der deutschen chemischen Gesellschaft, and Zeitschrift für Anorganische Chemie, articles embodying the results of his researches in analytical and inorganic chemistry, especially in the group of elements known as the "rare earths." Among his more important articles are his Contributions to the Chemistry of Cerium, Upon the Separation of Thorium from the Rare Earths of the Cerium and Yttrium Groups by means of Potassium Hydronitride, On the Analytical Properties of Iron Phosphide and Phosphate, Ueber die Trennung des Thoriums

but in 1880 he removed to Ithaca—the home of his boyhood and early manhood—where with ever-increasing delight in the beauty of the scenery he spent the remaining years of his life. He had thus for seventeen years been locally associated and for twenty-seven years officially connected with Cornell University. And the record of his labors and services and gifts to the University during that period constitutes a chapter which will long be remembered in the history of higher education in this country.

It is impossible for anyone who has not seen Mr. Sage, day after day, year in and year out, driving about the campus, while he directed the erection of buildings, the laying out of grounds, and the innumerable and multifarious details of repairs and alterations, to form any just conception of the enormous amount of work which the material face of the University, as we see it to-day, owes to his skilled and experienced hand. At the same time he kept himself as thoroughly conversant with the financial condition and operations of the institution as with his own personal business, and in large part he bore the responsibility of financial management and control. Nor was he, man of affairs though he was, unacquainted with the needs and aspirations of the various departments of instruction, whose heads always found in him an intelligent, a sympathetic, and a helpful patron.

The objects of Mr. Sage's benefactions coincide with the supreme ends of civilisation. Sage College is the embodiment of the ideal of JUSTICE TO WOMANKIND, *which few of the most progressive races have yet succeeded in realizing. To* TRUTH, *to* BEAUTY, *and to* GOODNESS, *he has erected enduring monuments in the Sage School of Philosophy, the Museum of Casts, and that Chapel which the piety of his wife first suggested to his willing mind. But while Mr. Sage was preeminently devoted to those highest spiritual ends and fostered with peculiar care the departments most directly charged with them, his wide intelligence and comprehensive sympathies embraced the University in the entirety of its ends, functions, and appointments. While his total gifts aggregated $1,175,290.79, more than half of that sum was devoted to the Li-*
ry building and endowment, which is, as he meant it to be, the
ting centre of the INTELLECTUAL LIFE *of the University.*

XIII. Pu *ater even than his gifts was the boon which Mr. Sage con-*
is management of the lands which the foresight of the

Founder had saved for his University. It seems more than accidental, we may in all reverence describe it as providential, that while in all the States of the Union only one man—Ezra Cornell of New York—had the prescience to foresee the eventual appreciation of the value of the lands granted by Congress for educational purposes, and at the same time the wisdom to devise the means for husbanding them, in this State also, among his friends, in the person of his successor as Chairman of the Board, there was a man whose training and experience, whose imagination and judgment, qualified him to realize for the University out of that landed estate more than even the Founder ever dreamed of.

By his services and donations Mr. Sage has writ his name large in the history of Cornell University. They entitle him to perpetual recollection as our Second Founder. And they will often be recalled by the generations who follow us as they continue to enjoy the fruits of this benefactor's liberal sowing. But we over whom Mr. Sage presided in this Board, and all who knew him personally, cannot help feeling that more precious even than his gifts and labors was the spirit in which he performed them,—the absolute disinterestedness of the man unalloyed by any taint of self-seeking or egotism, his deep and solemn sense of duty, the breadth and tenderness of his sympathies, his unquenchable hopefulness, his piety, his faith in the moral and intellectual progress of mankind, his earnest and effectual interest in the cause of education, and his love and devotion to this University as a great and beneficent agency for promoting the highest ends of civilisation and the best welfare of the Republic. In this spirit of our departed friend, and in all the noble qualities of his heart and mind and character, he has left us a heritage of priceless worth as a model and exemplar for successive generations of Cornellians."

The Trustees also mourn the loss by death of another colleague, Colonel George Bliss, of New York City. Though Colonel Bliss had been in the Board only about a year, he showed much interest in the welfare of the University; and his genial presence and wise counsel will be greatly missed by his fellow Trustees.

Through the action of the President of the United States, the University loses for the time being the services of two of the oldest and most faithful members of the Board of Trustees.

was born in Lockport, New York, in 1864. He obtained his secondary education in the Lockport Union School, and after some years in business life, he entered Cornell University in the fall of 1888. After two years in this university he went to Germany, and continued his studies in the University of Leipzig, where he took the degree of Ph.D. in 1892. In that year he was appointed to an assistant professorship of general chemistry and physical chemistry in Cornell University, which he has since filled. Mr. Trevor has published the results of numerous researches in experimental and mathematical physical chemistry, and with Mr. Wilder D. Bancroft he founded the Journal of Physical Chemistry, in 1896.

Alexander Buel Trowbridge was appointed professor of architecture. Mr. Trowbridge was born at Detroit, Michigan, in 1868. He obtained his secondary education in the public schools of that city, and entered Cornell University in 1886. Graduating in 1890 with the degree of B.S. in Architecture, he continued the study of architecture in Boston, Massachusetts, with William R. Emerson, Edmund M. Wheelwright, and Winston and Wetherell. After a stay of three years in Boston he went to Paris. There he passed the examinations for admission to the Ecole des Beaux Arts, studying in the atelier of Marcel Lambert, one of the Government Architects of France. After two years in Paris, Mr. Trowbridge returned to this country, and began the practice of architecture in his native city of Detroit as a partner in the firm of Nettleton, Kahn, and Trowbridge.

John Vredenburgh VanPelt was appointed assistant professor of planning and design in the College of Architecture. Mr. VanPelt was born in New Orleans, Louisiana, in 1874. His studies, up to the age of fourteen, were pursued in private schools in Germantown, Pennsylvania. He then went to France, where he began the regular study of architecture in the Ecole des Arts Decoratifs. In May, 1890, he entered the studio of Messrs. Douillard et Thierry, and a few months later took the examination for entrance to the Ecole des Beaux Arts. In 1892 he secured admission to the first class in the Ecole des Beaux Arts. The "projet" presented at this time was exhibited at the Columbian Exhibition. In

1895 Mr. VanPelt secured his diploma, with the degree of Architecte diplomé par le Gouvernement (A.D.G.). He was the first American to earn this degree, although he did not receive it until five months later, when two other Americans were ready and received the degree with him. Since that time he has been practicing the profession and continuing his studies in the Atelier Deglane, Paris. Mr. VanPelt's career has been successful throughout, and he has won a constant succession of prizes, first mentions, medals, etc.

Frederick Clark Prescott was appointed assistant professor of rhetoric. Mr. Prescott was born in Salina, Kansas, in 1871. Having obtained his preparatory training in the West, he entered Harvard University in 1890, graduating in 1894 with the degree A.B. *magna cum laude*. After one year of graduate study, chiefly English, in the same institution, he was appointed to the instructing staff in English, under Professor Baker. In this position, which he held up to his present appointment, he gave instruction in English composition. Mr. Prescott's work and interest have been largely in the field of argumentative composition, which he will teach here.

STUDENTS

The total number of persons receiving instruction at the University in 1896-97 was 2062. Exclusive of those attending the Summer Schools, and the Winter School in Agriculture, there were regularly enrolled 1808 students. This is the largest attendance ever registered, exceeding that even of 1893-94, which was the last year of low entrance requirements for the great majority of undergraduates, and of free tuition for all graduates. When we consider the enormous advance, extensive and intensive, which has been made in the entrance requirements annually since 1894, we find every reason to congratulate ourselves upon the hold which the University has obtained upon the country. It seems too much to expect that when these advanced requirements shall have been extended in 1897, and completed in 1898, the attendance will remain on the present level, but the history of the University fortunately shows that adverse predictions are exceedingly risky.

The following table, which embraces the last six years, has been prepared to exhibit in detail the attendance for the years preceding and succeeding 1894, when the entrance requirements began to be raised for undergraduates, and tuition fees were first charged to graduates:

	1891-2	1892-3	1893-4	1894-5	1895-6	1896-7
Arts	142	141	138	133	146	170
Philosophy	100	110	121	136	153	155
Science	82	89	89	115	144	159
Letters	94	82	85	65	50	27
Law	122	176	197	191	207	239
Civil Engineering	139	129	116	122	121	150
Mechanical Engineering	251	295	239	212	201	230
Electrical Engineering	250	260	332	289	295	243
Architecture	68	78	97	76	67	51
Agriculture (4 year course)	22	22	25	24	30	34
Veterinary Medicine		---	---	---	---	11
Medical Preparatory	12	11	5	6	4	8
Optional and Special	122	137	126	132	139	170
Graduate Department	177	170	231	188	145	161
Total in University,	1538	1700	1801	1689	1702	1808

A detailed study of the above table yields some interesting results. The courses in mechanical and electrical engineering and in architecture, for admission to which an additional year's training in the higher mathematics was required of those entering in the fall of 1894, over and above what was required of those entering in the fall of 1893, were the first to show a falling off. Taken together, we find in these three courses 91 less students in 1894-95 than in 1893-94, and a still further decrease of 14 in 1895-96, and of 39 in 1896-97. Taking the courses in mechanical and electrical engineering by themselves, we find in them 70 less students in 1894-95 than in 1893-94, 5 less in 1895-96 than in 1894-95, and 23 less in 1896-97 than in 1895-96. In architecture, we find in 1894-95 21 less than in 1893-94, in 1895-96 9 less than in 1894-95, and in 1896-97 16 less than in 1895-96. The effect was next felt in those courses now grouped together in the Department of Arts and Sciences, namely arts, philosophy, science, and letters. Of these the last named was abolished, no more students being allowed to enter in letters after 1895-96; in science the class entering in 1896 were required to present one year more of work in the modern languages than their predecessors, and the class entering in 1897 will be required to present two years more of work in modern languages, and one year in the higher mathematics, in addition to the preparation exacted of those who entered in 1896 ; in philosophy those entering in 1896 were required to present one year more of the modern languages than their predecessors. The requirements in arts have remained steadfast. It must be said that the effect of the first increase in the difficulty of entering the courses in science and philosophy, which should appear in the figures for the past year, does not show in a comparison with the figures of the same courses for the previous year, there being in each course a slight increase, 2 in philosophy, 15 in science. But this is no doubt mainly owing to the abolition of the course in letters, which went into effect simultaneously with the increase in requirements for these two courses. As a result, each probably drew from letters rather more than enough to hide the effect of the rise in requirements. That this effect was nevertheless felt is evident by comparing the increase in philosophy and science with the increase in arts, which registered 170 in 1896-97 as against 146 in 1895-96. As a whole, the Academic Department, in spite of the abolition of the course in letters and the advance in the entrance requirements in science and philosophy, has expanded from an enrollment of 493 in 1895-96 to 511 in 1896-97, thus maintaining the continuous annual increase to which attention was called in the Report for 1895-96 (pp. 17-18). In civil engineering, law, and agriculture, no considerable increase in the demands for admission has yet been made, and the attendance in each of these three courses has consequently reached the largest figures ever recorded. Meanwhile the Graduate Department, after showing the effects of requiring payment for tuition by falling off sharply in 1894-95, and again in 1895-96, began in 1896-97 to recover its former numbers. The course in veterinary medicine makes its appearance for the first time in the 1896-97 column, with an attendance small, yet promising as a beginning.

The Summer School, including the Summer School of Law, registered this year 194 students as against 237 in 1895-

-96, 272 in 1894-95, and 290 in 1893-94. It seems probable that the time is now ripe for considering whether the Summer School, if it is to be maintained at all, should not be made an incorporate part of the University. Certainly it is a question which demands serious consideration. It is easy to see that there are difficulties in the way. Work in the Summer School must be voluntary on the part of Cornell professors. Should they choose to give work in the Summer School, they might either deprive themselves of needed rest, thus involving a breakdown from overwork, as has already occurred more than once, or at least impairing their teaching efficiency during the academic year, or they might deprive themselves of time which should be devoted by them to their own private studies and investigations. Should they choose not to give work in the Summer School, it might be necessary for the University to engage professors from other institutions to give the instruction. This again might involve putting outsiders in charge of our laboratories. Since our professors of science are severally responsible for their laboratories, they might feel compelled by this consideration to remain, however unwillingly, and teach in the Summer School, although theoretically free not to do so. Over against all these objections, however, is the important work of training the actual teachers of this and other states, a work which, if it is done at all, must apparently be done in the summer. The short winter course in Agriculture was attended by 60 persons as against 83 in 1895-96 and 77 in 1894-95.

The number of degrees conferred in June, 1897, was 431. From the opening of the University to 1887, the number had never in any year reached 100. The figures for the last half dozen years illustrate very strikingly the rapid expansion of the University. The number of degrees conferred was in :

1892	'93	'94	'95	'96	'97
313	358	348	363	378	431

In the last Report, tables were printed showing the age and residence of students, the kind of schools (public or private) from which they had come, and the mode by which they entered the University (examination, regents' diploma, or certificate).

In the present Report, these tables are continued by the Registrar, whose report is for the first time published herewith. (See Appendix x). The changes noted by the Registrar are, first, an increase in the number of students coming from private schools, though over three fourths, and in New York State almost four fifths, continue to come from public schools; and, secondly, a decline in the age of men in the first year in law and mechanical engineering, as well as in the age of women in the freshman year in the Academic Department. The Registrar, on the advice of Professor Willcox, takes the median age as the standard, that being the middle point among the ages of a group, the point where one half the number are below and one half above it. But the lowering of the age just indicated is true whether the average age (as last year) or the median age (as now) be made the basis of comparison. For further details reference is made to the Registrar's report, which contains much valuable information, notably the record of the degrees conferred by the University since its first Commencement in 1869.

In spite of individual delinquencies—some of them serious—the student body has admirably maintained its reputation for hard work, good behavior, and loyalty to the best interests of the University. One of the most interesting of student events was the victory which the Cornell debaters wrested from Pennsylvania at the intercollegiate oratorical contest held at Philadelphia, on March 6, 1897. But by far the most exciting occurrence was the intercollegiate boat race at Poughkeepsie, in which Cornell defeated Harvard and Yale, and, seven days after, Columbia and Pennsylvania. The result of the contest was of course highly satisfactory to all the friends of the University; and the President, in congratulating the winners, takes especial pleasure in commending the exemplary conduct which was displayed by all Cornellians on that critical occasion. Whether or not the Cornell idea—an open field to all and favor to none—now becomes the established practice of the American rowing colleges, the public will at least appreciate the grounds of it, and the University is left in a favorable position for almost any future development. The victory in rowing is likely to stimulate other branches of athletics, to which the change in the hour of military drill—obligatory on freshmen and sophomores—ought also to prove favorable. These developments will be welcomed if they can be effected without injury to health or to scholarship. Nor is there any reasonable ground for anxiety, as athletics are now under such admirable regulation—thanks to the joint efforts of students, graduates, and professors—that they cannot well endanger those more important objects for the sake of which the University exists. One problem, however, remains unsolved, that of inducing large numbers of students, in addition to the contesting crews and teams, to practice rowing and other outdoor sports. The health and harmonious physical development of *all* students as the ultimate end of physical training should never be lost sight of.

ADVANCED ENTRANCE REQUIREMENTS

The continuous advance in the standards for admission which has been in progress since 1894, which will not be completed till 1898, and whose cumulative effect will not be felt in full force till after the latter date, will doubtless continue to check, if it does not indeed somewhat reduce, the attendance at the University. But there can be no doubt of the wisdom of making a full high school course the stepping-stone to every college and department in the University. In this connection, it may be worth while calling attention to the fact that while nominally the requirements for admission to the courses in engineering and architecture—in spite of the recent addition of advanced mathematics—are lower than a full high school course, in practice, generally speaking, owing to the conditions of admission by certificate, they are not ; so that the University in those divisions is maintaining higher standards than it gets credit for,—a condition of things which the several faculties will soon be asked to consider. And, besides this adjustment, it may be advisable to equate more accurately the alternative groups (a, b, c) of entrance requirements to the Academic Department, as the statement is made that c (the group containing advanced French, advanced German, and advanced mathematics) is considerably more difficult than the others. Finally, in addition to these improvements in policies already established, the question of accepting science subjects for admission—not by the permission of occasional substitutions as now, but by an offer of original alternatives—should be taken up by the faculties just as soon as the important committees of the state and national educational associations which are now charged with the consideration of science studies in the schools shall have made their reports.

STUDENTS' BOARD AND LODGINGS

In November, 1896, the President mailed a circular to every student in the University asking the favor of a report, for his confidential use, on the cost of 1) board and 2) lodgings—with or without roommate—for each of the years 1893-94, 1894-95, 1895-96, and 1896-97. In response to this circular, which early in December was followed by a reminder addressed to all those from whom nothing had been heard, reports were received from 1542 students. There were at that time about 1760 students in the University, so that those reporting constituted about 87 per cent of the student body. Of the reports received, 134 were for various reasons (such as inability to distribute a lump sum paid for both board and lodging, living with parents, etc.) defective in the item of lodgings, and 110 in the item of board. The tables here given are therefore worked out upon full and correct returns from almost exactly 80 per cent of the student body, and as such are complete enough to give very reliable results. The returns cover the four years, but naturally with a continuous decrease in the numbers reporting for each receding year.

Of the 1542 students who sent in returns, 1296 were men and 246 were women. Most of the women live in Sage College. The average sum paid for both board and lodging by the women living in Sage College is $5.32, and the returns show that this average is not materially changed by the few living elsewhere. The following tables are confined to a consideration of the returns from the men students, for whom the University has not yet provided either halls of residence or commons.

The numbers and percentages of men engaging rooms, with and without roommates, at the various rates in 1896-97, together with the total results, are given in detail in the following table. The statistics for previous years have been worked out on the same plan, but as they show results generally similar, they are not here presented.

Price of Rooms	Number of men engaging rooms at the various rates			Percentage of men engaging rooms at the various rates		
	With room-mate	Without room-mate	Total	With room-mate.	Without room-mate	Total
$4.00+	7	29	36	1.0	6.4	3.0
$3.51–4.00	18	26	44	2.5	5.7	3.7
$3.01–3.50	35	23	58	4.8	5.0	4.9
$2.51–3.00	86	56	142	11.7	12.3	11.9
$2.26–2.50	100	52	152	13.6	11.4	12.8
$2.01–2.25	29	15	44	4.0	3.3	3.7
$1.76–2.00	85	79	164	11.6	17.3	13.8
$1.51–1.75	43	12	55	5.9	2.6	4.6
$1.26–1.50	113	73	186	15.4	16.0	15.7
$1.01–1.25	56	40	96	7.6	8.8	8.1
$1.00 or less	155	45	200	21.1	9.9	16.8
Work	6	6	12	.8	1.3	1.0
Total	733	456	1189	100.0	100.0	100.0

In order to make the meaning of these figures more readily perceptible to the eye, the following table has been prepared, in which only three sets of prices are made, namely: more than $2.50, $1.51 to $2.50, inclusive, and $1.50 or less, counting in with the latter the small number of students who pay no cash sum for their lodgings, but instead render services of various kinds.

Price of Rooms	Number of men engaging rooms at the various rates			Percentage of men engaging rooms at the various rates		
	With room-mate	Without room-mate	Total	With room-mate.	Without room-mate.	Total
$2.50+	146	134	280	20.0	29.4	23.6
$1.51–2.50	257	158	415	35.1	34.6	34.9
$1.50 or less	330	164	494	44.9	36.0	41.5
Total	733	456	1189	100.0	100.0	100.0

From the foregoing table it will be seen that during 1896-97 one fifth of the students sharing their rooms with roommates paid more than $2.50 a week for their rooms, one third paid more than $1.50, but not more than $2.50, while nearly one half paid $1.50 a week or less for their lodgings. On the other hand, of the men who roomed alone, less than one third, but more than one fourth, are to be found in the first class, and a little over one third in each of the other two.

As has been said, the number of students reporting for earlier years is less than for 1896-97. Owing to that fact the statistics for the earlier years are not to be counted on as equally reliable or representative with those for 1896-97. As they have a certain value in themselves, however, they are here appended in the less detailed form.

Year	Price of Rooms	Number of men engaging rooms at the various rates			Percentage of men engaging rooms at the various rates		
		With roommate	Without roommate	Total	With roommate	Without roommate	Total
1893–94	$2.50+	31	35	66	17.9	36.1	24.5
	$1.51–2.50	60	36	96	34.6	37.1	35.6
	$1.50 or less	82	26	108	47.5	26.8	39.9
	Total	173	97	270	100.0	100.0	100.0
1894–95	$2.50+	62	46	108	21.2	31.3	24.6
	$1.51–2.50	94	51	145	32.2	34.7	33.0
	$1.50 or less	136	50	186	46.6	34.0	42.4
	Total	292	147	439	100.0	100.0	100.0
1895–96	$2.50+	81	84	165	17.7	35.1	23.6
	$1.51–2.50	187	75	262	40.7	31.4	37.6
	$1.50 or less	191	80	271	41.6	33.5	38.8
	Total	459	239	698	100.0	100.0	100.0

It will be noticed that there are variations both up and down in the percentages for the different years. Thus while we found precisely 20 per cent paying more than $2.50 for rooms with roommates in 1896-97, we find the percentage of students similarly circumstanced to have been higher in 1894-95, but lower in 1893-94 and in 1895-96. The fact, however, that the figures for 1896-97 strike a rough mean of the figures for the earlier years in itself tends to confirm the validity of the 1896-97 table as a true statement of the cost of student lodgings at Cornell. This confirmation is graphically shown in the following table where the figures for the whole four years are treated in combination. Thus the average percentage of students with roommates, taking the four years together, who paid more than $2.50 for their lodgings varies less than 1 per cent from the percentage already found for such students in 1896-97.

COMBINED RESULT FOR THE FOUR YEARS

Price of Rooms	Number of men engaging rooms at the various rates			Percentage of men engaging rooms at the various rates		
	With room-mate	Without room-mate	Total	With room-mate	Without room-mate	Total
$2.50 +	320	299	619	19.3	31.8	23.8
$1.51-2.50	598	320	918	36.1	34.1	35.4
$1.50 or less	739	320	1059	44.6	34.1	40.8
Total	1657	939	2596	100.0	100.0	100.0

It appears from this table that of the entire student body, in round numbers, 40 per cent pay $1.50 or less for lodgings and 35 per cent from $1.51 to $2.50.

The number and percentages of men engaging board at the various rates in 1896-97 are given in detail in the following table:

Price of Board	Number of men engaging board at the various rates	Percentage of men engaging board at the various rates
$5.00 +	1	.08
$4.51-5.00	52	4.3
$4.01-4.50	101	8.4
$3.51-4.00	231	19.0
$3.01-3.50	212	17.5
$3.00	433	35.7
$2.60-2.99	90	7.4
$2.01-2.59	9	.7
$1.01-2.00	12	1.0
$1.00 or less	4	.3
Work	68	5.6
Total	1213	100.0

It will be noticed that more than one third of all the men in the University pay exactly $3.00 for board, and that more than one third pay sums ranging from $3.01 to and including $4.00. These two groups include 72.2 per cent, or very nearly three fourths of the total. This may be more clearly seen in the following condensed table for 1896-97 :

Price of Board	Number of men engaging board at the various rates	Percentage of men engaging board at the various rates
$4.00+	154	12.8
$3.01-4.00	443	36.5
$3.00	433	35.7
Less than $3.00	115	9.4
Work	68	5.6
Total	1213	100.0

From these results no general deviation is observable in the tables for the earlier years, which are here appended in the more condensed form. The two important groups, which include those who pay sums ranging from $3.00 to $4.00, both inclusive, contain throughout about 70 per cent of the total.

Year	Price of Board	Number of men engaging board at the various rates	Percentage of men engaging board at the various rates
1893–94	$4.00+	28	10.2
	$3.01-4.00	124	45.7
	$3.00	63	23.2
	Less than $3.00	44	16.1
	Work	13	4.8
	Total	272	100.0
1894–95	$4.00+	51	11.5
	$3.01-4.00	185	41.6
	$3.00	128	28.8
	Less than $3.00	58	13.1
	Work	22	5.0
	Total	444	100.0
1895–96	$4.00+	77	10.8
	$3.01-4.00	306	42.8
	$3.00	229	32.1
	Less than $3.00	62	8.7
	Work	40	5.9
	Total	714	100.0

The smaller numbers obtainable for earlier years make the tables for those years less reliable than those for 1896–97. It is possible that there was a real cheapening of the cost of board during those years. 1893, it will be remembered, was the beginning of the recent period of hard times, and between that time and 1897 the prices of food staples reached a point lower than in previous years, and indeed much lower than at present. In all probability, therefore, the following table giving averages for the whole four year period is a better guide to future prices than the table of prices for 1896–97:

COMBINED RESULT FOR THE FOUR YEARS

Price of Board	Number of men engaging board at the various rates	Percentage of men engaging board at the various rates
$4.00 +	310	11.7
$3 01-4.00	1058	40 0
$3.00	853	32.3
Less than $3.00	279	10.6
Work	143	5.4
Total	2643	100.0

It appears from this table that of the entire student body, about 50 per cent pay $3.00 or less for board, and 40 per cent from $3.01 to $4.00.

THE GRADUATE DEPARTMENT

The number of students enrolled in the Graduate Department was 161. Besides these, 94 graduates were enrolled as undergraduates in the several courses leading to first degrees. During the past ten years nearly 800 graduates, representing nearly 150 institutions, have been admitted to graduate work. Of the 161 members of the Graduate Department, 133 were candidates for advanced degrees, 79 of them seeking the Ph.D.

The number of advanced degrees conferred at the last Commencement, including those in law, was 44, of which 11 were the Ph.D. and 10 the A.M.

The abolition in the Academic Department of all other degrees than the A.B. has been followed in the Graduate Department by the abolition of the Ph.M., M.L., M.S., and D.Sc. degrees, and the establishment of the A.M. and Ph.D. degrees as the sole degrees, other than technical or professional degrees, in the Graduate Department. In the broad domain of arts and sciences, the University will hereafter confer three degrees only—A.B., A.M., Ph.D. For each technical or professional course—engineering, law, veterinary medicine, agriculture, etc.—there remain the appropriate descriptive first and second degrees of Bachelor of Laws and Master of Laws, Mechanical Engineer and Master of Mechanical Engineering, Bachelor of the Science of Agriculture, etc. The wisdom of these changes will be tested by time. But as the dean of the University Faculty points out (Appendix II, p. x), the consolidation of degrees, both in the Academic Department and in the Graduate Department, has come about as the result of a gradual and natural development, and has "been attended by a gradual increase in the severity of the requirements for admission and for graduation." The principle involved in all cases is the recognition of the equal value of different courses of liberal study, and the futility, as well as the inutility, of attempting to differentiate them by a variety of degrees. Whatever the studies selected, thorough work is the important consideration. And to meet the increasing demands which in practice have grown up for the doctor's degree, the rule making two years the minimum period of candidacy was amended so as to make the course one of at least three years, though with an exception in favor of candidates of unusual proficiency.

The Graduate Department is under the direct charge of the University Faculty, which consists of all the professors and assistant professors in the University. The other function of this faculty is to consider questions which concern more than one special faculty, and questions of University policy. The effect of the recent reorganization of the faculties, described in the Report of last year (pp. 33-38), has been markedly in the direction of decentralization, the special faculties now exercising most of the powers formerly vested in the old General Faculty. Yet there are questions of general concern, transcending the interests of every special faculty, which call for the intervention of the University Faculty. It is difficult, if not impossible, to define them in advance of experience, and even as they arise it may often be a question whether they do or do not fall within the purview of some special faculty. But the good sense and moderation of the different faculties may be trusted to work out in the course of time a satisfactory delimitation of these debatable grounds. Possibly the work of the year under review may furnish a pregnant example for the future. Two special faculties—those of architecture and agriculture—voted to change the form of their first degrees, in the one case from Bachelor of Science in Architecture (B.S.) to Bachelor of Architecture (B. Arch.), and in the other from Bachelor of Science in Agriculture (B.S.) to Bachelor of the Science of Agriculture (B.S.A.). As a matter of courtesy they reported their action to the University Faculty. The question of jurisdiction was raised, but with the practical and compromising spirit characteristic of all Anglo-Saxon legislative bodies, it was left unsettled, while the University Faculty recognized as an accomplished fact the initiative of the two special faculties, and voted to approve of the action they had taken. As to the change itself, it may be noted that it was the final step in the simplification of first degrees. From this time on the University will have one first degree (A.B.) for the Academic Department,—a degree which connotes a four year course of liberal study after matriculation, and one first degree for each of the professional courses (LL.B., M.E., C.E., D.V.M., B.Arch., B.S.A.), which is at once a description of the course taken and a certificate of the graduate's fitness to enter upon the practice of his profession; and as has been pointed out above, the same simplification of degrees has also been effected in the Graduate Department. Cornell University stands for liberal culture and professional education; the goal of the former is the A.B., A.M., and Ph.D.; and the latter leads in each case through a prescribed course to a degree characteristic of the profession.

THE ACADEMIC DEPARTMENT

The number of students in the Academic Department in 1896–97, not including special students, was 593, which is the largest ever enrolled. For comparison with other courses see pp. 16–17, and for age and geographical distribution of students at entrance see the Registrar's report. (Appendix X, pp. L, LIII, LIV.)

In Dean Crane's report (see Appendix III, pp. XVIII–XXV), will be found a detailed account of the administrative work of the Faculty of Arts and Sciences, which has charge of the Academic Department. As the Dean observes, it was not to be expected that the year's legislation "could equal in interest and importance that of last year when the reorganization of the University was accomplished, and the new course in arts was created." Perhaps the most important legislation of the year was the amendment of the rule governing the election by juniors and seniors of studies in the College of Law, and the application of the rule as amended to the election of studies in any other college of the University. Under the regulation now established, juniors and seniors in the Academic Department are allowed, with the permission of the faculties concerned, to elect studies in any other college which shall count towards graduation in the Academic Department; but the sum total of hours so elected must not exceed the number required for one year's work in such college, nor exceed nine hours per week (i. e. half time) in any term. This action, while enabling undergraduates to shorten the courses for two degrees by one year, yet prevents their entire withdrawal from the Academic Department at that period of their studies when they are best fitted to profit by the instruction offered in the advanced courses.

From the reports of the heads of the several departments, which deal both with their graduate and undergraduate courses, the following facts are gathered, as specially indicative of their work, aims, and needs.

Professor Schmidt reports that during the first year of the newly established department of the Semitic languages and literatures, courses have been given in the Hebrew, Aramaic, and Arabic languages, in the Old Testament literature, and in oriental history. He outlines the aim of the department as being 1) to furnish adequate opportunities to linguistic students and to those preparing for the Jewish or Christian ministry of acquainting themselves with the Semitic languages and the Egyptian, 2) to present to those not familiar with the Semitic languages the results of scientific study of the Bible and other literary productions of the Semites, and 3) to offer to historical students the opportunity of studying the history of the East. He finds his work hampered by the lack of adequate library facilities, including both books and maps, upon which he considers $10,000 would be no more than an adequate expenditure.

Professor Wheeler returned from his year's work in the American School of Classical Studies at Athens to take up again his duties as head of the Greek department. He reports a most flourishing condition in that department, which registered in its classes during the three terms of the past year an average attendance of 264 as against 23 in 1885–86. Professor Wheeler points out that the attendance in Greek has during the eleven years of his connection with the University been multiplied by eleven and one half. This indicates at once an increase of classical study in the schools, and a gratifying increase of confidence in Cornell as a place for classical teaching. While anticipating some decrease in the numbers attending the less advanced courses, resultant upon the action taken in 1896 with regard to the A.B. degree, Professor Wheeler expects that the students taking them will, as heretofore, be seeking general culture, rather than training as specialists, and the character of these courses will therefore continue as at present. There has been established in lieu of the associate professorship of classical archæology, which shared in the general abolition of the grade noted in the last Report, a curatorship of the museum of casts, the incumbent of which will give instruction in archæology. To this office was appointed Mr. E. P. Andrews, whose feat of deciphering the inscription formerly on the Parthenon was noted in the last Report. Professor Wheeler urges the appointment of a specialist to teach Sanskrit and Zend, thus relieving his department of the instruction in those branches. While no new volume of the Cornell Classical Studies has been printed during the year, he announces that four volumes have been completed, and are now ready for publication.

Professor Bennett reports an encouraging number of the best students taking the elective work in Latin, and the presence of many graduate students in the more advanced courses.

Assistant Professor Elmer has returned from spending his sabbatical year in Europe, and taken up again his share in the instruction in this department. Mr. H. J. Edmiston having resigned his instructorship at the end of the year, Mr. Charles Love Durham, a graduate of Furman University, who held a fellowship here during the past year, has been appointed instructor in Latin. Professor Bennett finds the preparatory work in Latin of his students to be noticeably imperfect, and urges that steps should be taken to secure improvement in this respect.

Professor White reports that the German seminary has continued to form an important feature of the work of his department. The seminary room has during the year received two gifts, one a metal bust of Goethe from the outgoing members of the seminary for 1895–96, and the other a large plaster cast of the Trippel bust of Goethe, presented by Professor J. M. Hart. The attendance at the lectures on Goethe's Faust was eighty-four, the largest in the history of the department. The direction of the preparation of theses both for first and second degrees also makes increasing demands upon the department. During the past year a special course has been given by Professor White in the examination and translation of forms of correspondence, for which a large number of facsimiles of German chirography, as well as a mass of original letters, were available; and for the coming year he has offered a new "teachers' course." Professor White reiterates the statement made by him in previous reports that there is pressing need in the German department of additional scholarships and fellowships. Since the last Report Dr. L. A. Rhoades has accepted an assistant professorship elsewhere, and the instructorship in German thus made vacant has been filled by the appointment of Mr. G. B. Viles. Professor Hewett returned from his visit to Europe last summer upon leave of absence, and again carried his classes through the year. He reports that he has given, besides the second year work in course 2a, three advanced courses. These were a course in Heine and the Romantic school; a course in Middle High German, in which the lyric poetry of the period, particularly that of Walther von der Vogelweide, was studied; and a seminary course in which the history of poetic form was studied, and lectures were given on early Germanic verse and the influence upon German poetry of classical forms.

Professor Crane reports that the courses in the department of Romance languages have been given as offered without change or interruption. He notes a slight increase in the number of students taking advanced work in the department, and a corresponding slight decrease in the more elementary courses, pointing to better work in French in the preparatory schools. Professor Crane thinks the increasing number of advanced students in Romance language work will soon call for a clearer differentiation of the graduate courses in the department; and likewise for an increased number of graduate subventions, the Romance and Germanic languages having now only one fellowship and one scholarship between them. He urges that at least these be made two fellowships. One candidate for the master's, and three for the doctor's degree, have been preparing theses under Professor Crane's direction this past year.

Professors White and Crane both make strong pleas for more liberal initial salaries for the instructors in the modern languages. The qualifications upon which they have always insisted, including, besides graduation from a university, experience as a teacher of languages, graduate study, and residence abroad, demand of the instructors in these branches unusual maturity and length of preparation.

In the department of English, Professor Corson reports the carrying out of the full programme of courses in English literature laid out for the year. The number of students taking these courses was much greater, and the work done by them was better, than in any previous year. A very encouraging feature is the large amount of reading of classical English authors which Professor Corson has induced his students to undertake. Professor Hart reports an unusually large freshman class in rhetoric, and so much greater efficiency in the work done by this class as, in his opinion, amply to justify the action of the faculty in making English elective. The classes in philology not taken by Professor Hart himself have fallen off somewhat, owing probably to the transference of Professor O. F. Emerson's classes to a younger and less known man, a cause whose effect will not be lasting. English 4, however, the teachers' training class in English, has shown an increase in numbers. From the appointment of Frederick C. Prescott (see p. 15) to an assistant professorship with particular charge of argumentative composition, increased scope and efficiency of rhetorical instruction is anticipated. Assistant Professor Lee reports increased interest in all classes in elocution and oratory, and notes the second successive defeat of the University of Pennsylvania debaters in the annual contest with Cornell.

In the Sage School of Philosophy, Professor Seth reports a rather small attendance upon the elementary class in ethics, but a good attendance in the more advanced courses and a very high grade of work throughout. In the coming year, he will add to his present courses one throughout the year on the history of ethics, and an elementary course to be given in the spring term only. Professor Creighton reports two variations from the courses announced to be given in logic and metaphysics, the omission of the course on German philosophers since Hegel's death, which was to have been given by Dr. Irons, and the substitution by Dr. Albee of a course on the three Critiques of Kant for the brief survey of Leibniz, Hume, and Kant. Professor Creighton notes that the majority of those taking the advanced courses offered in his department are graduates, several classes being exclusively composed of graduate students. Professor Titchener reports that the psychological laboratory has been used more continuously, and by more students, than in any previous year. The results of seven psychological investigations carried on here, two of which were theses presented for the doctorate, have been published by students in the department during the past year. Dr. Pillsbury, assistant in psychology, having been called to take charge of the psychological department of the University of Michigan, his place has been filled by the appointment of Mr. I. M. Bentley. Professsor C. M. Tyler reports increased and striking interest shown by the classes in the history of religions. He reinforces the request of the professor of Semitics for maps of Egypt, Arabia, Assyria, and other oriental countries. Professor S. G. Williams reports a good attendance and systematic prosecution of the work in pedagogy.

In the President White School of History and Political Science, the work of Professor M. C. Tyler in American history has gone forward without breaks and in a satisfactory manner. The work in this branch will henceforth be enlarged and rendered more effective by the creation of an assistantship, to which Mr. C. H. Rammelkamp has been appointed. He will give his attention particularly to the history of New York State, a subject whose importance was touched upon in the last Report. At the same time, the examinership in American history being discontinued, there was added to the fellowship, a scholarship in American history. The publication of the two volumes of Professor M. C. Tyler's Literary History of the American Revolution should be noted as further marking the year. Professor Burr's absence in the prosecution of important historical researches for the American Venezuela Commission continued through the fall and winter terms. This necessitated the omission of his class in palæography and diplomatics. Professor Morse Stephens, in addition to the duties of his own chair, carried in this branch the classes in mediæval history and in Greek history during the fall term, and the latter in the winter also. Professor Burr, upon his return in the spring, covered as far as possible the two terms' work remaining in the class in mediæval history, carried on the class in Greek history, and held his historical seminary. As a result of the irregularity in this work, however, the classes in ancient and mediæval history have suffered in attendance during the past year. As to the work Professor Burr has performed during his absence, the editorial statement of the American Historical Review may be cited to the effect that: "never, in the history of diplomacy, probably, has a boundary dispute been illustrated by a more thorough, penetrating, ingenious and impartial investigation than that which Professor Burr has devoted to this problem" [i. e. of the boundary between Venezuela and British Guiana]. Professor Jenks, for the work in political science, in chronicling the giving of new courses on the financial and constitutional history of the State of New York (Assistant Professor Hull), the introduction to political science (Professor Jenks, Associate Professor Willcox, and Assistant Professor Hull) and other courses, announces for next year new courses on modern questions in international politics (Professor Jenks), anthropology and ethnology (Associate Professor Willcox), readings in economic German (Assistant Professor Hull), and history, statistics, and theory of international trade (Dr. Bullock). Professor Jenks lays especial stress on the study of concrete problems of social life as the distinguishing characteristic of the work in political science at Cornell, the aim being consistently the preparation of students for the duties of citizenship. Besides the usual magazine articles, addresses, etc., two books worthy especial notice have been published, Dr. Bullock's Introduction to the Study of Economics and Assistant Professor Hull's edition of the Economic Works of Sir William Petty, with introduction and notes.

In mathematics, Professor Wait reports a year of enthusiasm and progress. Mr. Paul Arnold, holder of the fellowship in mathematics, has spent the year in study in Berlin. The year has seen the establishment, by gift, of an annual scholarship entitled the Oliver Graduate Scholarship in Mathematics.

Professor Nichols, in reporting upon the tenth year during which he has had charge of the department of physics, gives interesting data on the growth of the work in this branch. In 1887, a class of seven men graduated in electrical engineering. In 1897, there were sixty-nine who received degrees in electrical engineering. In the same time the teaching force in physics grew from one professor, one assistant professor, and one instructor in 1887, to one professor, three assistant professors, and seven instructors and assistants in 1897. Professor Nichols announces the completion of a series of seven text-books written by members of the department staff, by which the work has been systematized and facilitated. These works were all written to meet the special needs of our students, but they have found wide use in other institutions. The Physical Review, which has just completed its fourth year, has established its place among scientific journals on both sides of the Atlantic, while original research, which it was purposed to foster, has so overwhelmed it with valuable matter for publication, that with the fifth volume it begins issue as a monthly magazine. An appropriation of $5,000 was made to secure a complete outfit of the machinery of polyphase transmission including accessories and installation. More money is needed for additions to the direct current electrical machinery.

Professor Caldwell reports a successful year in the department of chemistry. He considers, however, that there is urgent need of the establishment of the division devoted to applied chemistry which he has previously recommended. The organization and effectiveness of the department have been advanced by the appointment to full professorships of L. M. Dennis, hitherto associate professor of analytical chemistry, and J. E. Trevor, hitherto assistant professor of general chemistry and physical chemistry.

Professor Atkinson reports that a thorough and systematic reorganization of the courses in botany has been most successfully carried out, and that it has been accompanied by an increased attendance, particularly in the laboratory. He urges an increase in the instructing force to provide more fully for work in plant physiology and in forestry, and a liberal expenditure for the building up of the botanical museum by the purchase of valuable collections. He further states that the present large attendance in this department is seriously overcrowding the limited laboratory space, and that, to provide adequate laboratories, museum space, etc., a separate building designed especially for botanical purposes will soon be a necessity. A botanic garden on an extensive scale (600–800 acres) is another pressing requirement, and in order to obtain a tract in which the vegetation may be perpetuated and studied in its natural state, it is advisable to provide for this need at the earliest possible moment.

In the department of entomology and general invertebrate zoology, the year, though marked by no extensive departure from previous years, has been a most successful one. The year has seen the publication of Professor Comstock's Insect Life, which is intended to facilitate the introduction of nature study into the secondary schools; the publication of further valuable investigations in economic entomology by Mr. Slingerland; and the steady progress of Mr. MacGillivray in his work on the entomological collections, signalized by the discovery and description of a large number of new species of Tenthredinidae.

Professor Wilder reports good attendance upon the classes in physiology and vertebrate zoology ; a number of investigations which have added to scientific knowledge ; additions to the museum, considerable not in numbers but in value ; an enlargement, identification, and rearrangement of the local collections ; and a growth of interest and enthusiasm in general natural history work. Professor Wilder's share in matters of general educational importance, through lectures, papers, and addresses before various bodies, has been large, as usual. He has during the year, in particular, given impetus to a movement for the practical study of the brain early in the public school course.

Assistant Professor Hopkins, in submitting the first report of the department of anatomy, says that the organization of the new department, the fitting up of the laboratory and preparing of the new courses have during the past year left little time for research work. He urges the appointment of an assistant, since the number of students is large, the laboratory must be kept open nearly all the time, and constant supervision and direction is necessary to make laboratory study effective.

Professor Gage reports that the attendance in the classes and laboratories of the department of microscopy, histology, and embryology was so great that even the admirable facilities now available in the work were put to a strain, and the work of instruction became arduous ; this was lightened however by the presence of great enthusiasm on the part of the students, so that work went forward most successfully. A seminary course has been a valuable innovation, and important research work has been done during the year.

In the department of geology, Professor Tarr notes a large and steady increase in the size of the classes in dynamic geology and physical geography. A new course has been offered on methods in teaching geography. This will be a standard feature of the work hereafter. Field-study in these branches is steadily enlarging, and during the past year Professor Tarr has taken classes as far as the Niagara Falls gorge, and Wilkes Barre, Pennsylvania. Professor Tarr's trip to Labrador, Baffin's land, and Northern Greenland, accompanied by Assistant Professor Gill and several students, has been directly productive of good results. Professor Tarr's Elementary Physical Geography, published last year, reached its fifth edition in fifteen months, and during this first year of its publication was used by 10,000 school pupils. He has now published an Elementary Geology for school use. Assistant Professor Gill reports that the work in mineralogy and petrography has been facilitated by improvements in apparatus, by the introduction of water and gas into the upper laboratory, and by the addition to the collections of about 200 arctic rock-specimens. In palæontology, Assistant Professor Harris reports that as the result of last summer's collecting expedition in Alabama, Georgia, and Virginia, from one to four students have been steadily occupied helping the professor arrange and classify the new material. The large collection of brachiopods already in the museum has been arranged and classified, and the task of cataloguing the the Newcomb collection, embracing more than 10,000 species and 40,000 specimens, has at last been brought to a close. Assistant Professor Harris considers the collection, examination, identification, and cataloguing of palæontological material the best training for a palæontologist. Class instruction has, however, not been neglected. The palæontological equipment has been sensibly improved by the acquisition of new apparatus. Professor Tarr and Assistant Professor Gill strongly present the need of a new building devoted to geology; and for the perfection of the equipment and carrying out of the work in all branches of geology large sums of money are still needed.

In physical culture, Professor Hitchcock reports that class work has gone forward as usual. In addition, he has been making a statistical study of the results of fatigue which promises interesting results. Professor Schuyler, for the department of military science, notes excellent work in the course in military science, and, in military drill, regular attendance and good progress. A change in the drill hour from 4:45 to 2 p. m., which has just been effected, is expected to improve the quality of the work.

One hundred and fifty-eight of the women students have during the past year lived in Sage College, and at no time less than 147. Sage College has grown in popularity since the repeal of the old rule making residence obligatory. Increased gymnasium facilities, the providing of fire escapes and ample fire alarms, and other improvements, have at the same time joined in making life there more attractive than residence elsewhere in Ithaca. The accommodations, indeed, even with the increased number of rooms afforded by the new wing, have not met the demand during 1896–97. With a view to providing more adequately for the accommodation of women students, the University has purchased and refitted the spacious residence of the late Professor Prentiss, in which there will be accommodations for 42 students who, however, will take their meals in the Sage dining hall. The house, which was purchased from the Sage College funds, has been designated the Sage College Cottage, and in administration and management it is, though not quite contiguous with the main building, to be treated as an integral part thereof. This Cottage and the annex, erected in 1895, almost double the lodging capacity of Sage College. Along with the enlargement of the establishment on its material side, the Board has given added dignity to the office of the head by abolishing the former title (which was associated with fitting schools) and adopting that of "Warden," which is the honored title of the head of the oldest college for men in the English-speaking world—Merton College at Oxford. While giving, if possible, renewed emphasis to the social side of the office, the Board also expect the incumbent to possess the same scholastic and intellectual attainments as are demanded of members of the faculties; and to this end it has been provided that the Warden of Sage may become a member of the instructing staff of the University. Apart from the appointment three years ago of Miss Canfield to take charge of the work in the Sage gymnasium, this is the first recognition at Cornell University of women's right to teach as well as to learn. The new Warden, who succeeded Mrs. Hooker on the expiration of her appointment in June, is Miss Louise Sheffield Brownell, Ph.D. Miss Brownell graduated some years ago at Bryn Mawr, from which she also received an appointment to a traveling fellowship. She studied two years abroad, in Germany and in England, spending the larger part of the time at Oxford. On her return she continued her studies for two years more, at Columbia and Bryn Mawr, from the latter of which she received the Ph.D. degree. Miss Brownell has made a specialty of Greek and English literature, and, with the cordial approval of Professor Corson, she is to offer courses in his department (her courses being open to all properly qualified students of the University). Though teaching is a subordinate part of Miss Brownell's work at Cornell, it has been recognized in her official title, which is that of Warden of Sage College and Lecturer on English Literature. It is, however, in her capacity of Warden that Miss Brownell's duties chiefly lie.

THE COLLEGE OF LAW

The total number of students coming under the instruction of the Faculty of Law was 305. Of these 249 were regularly enrolled in the College of Law, while 56 were students in general and technical courses who elected a portion of their work in law. This attendance is considerably the largest ever registered, exceeding that of 1895–96 by 56 or, if we limit the comparison to law students proper, by 48. For comparison with other years and other courses see pp. 16–17 ; and for the age and geographical distribution of students at entrance, etc, see the Registrar's report. (Appendix X, pp. L, LIII, and LIV). Besides the constant forces which have attracted students of the law to Cornell, the most important of which are the strength of the faculty and the richness of the library, the attendance in 1896–97 received an extraordinary stimulus from the fact that it was the last year of the two years' course, and the last but one of the low entrance requirements. It may, therefore, be predicted that the attendance in 1897–98 will be smaller, and still smaller that of 1898–99, when candidates for admission will be required to pass the matriculative examination of the Academic Department. The following years will doubtless bring about a recovery. But whatever the results in numbers may be, there can be no doubt of the wisdom of the legislation which raises the standard of admission and extends the subsequent period of study. Nothing less would nowadays satisfy either the dignity of the profession or the scholastic ideals of the University.

For a considerable portion of the year, Professor William A. Finch was incapacitated by illness from the discharge of his duties, both as professor and as secretary. His course in real estate was taken in part by Judge Finch and in part by Mr. Jared T. Newman, whose services were greatly appreciated by both faculty and students; and Professor Huffcut obligingly added to his other duties the conduct of the secretary's office. Although Professor William A. Finch is now happily restored to health, Mr. Newman has been appointed lecturer on practice and procedure for the year 1897–98, thus supplying a phase of instruction for which no adequate provision has hitherto been made.

Additional shelving has been provided for the library, and a rearrangement of books in the lower room, with the result of making them more accessible, has been carried through. Valuable volumes of statutes have been received as gifts from the governments of Bermuda, West Australia, New South Wales, and Jamaica; and donations from other sources have been not infrequent. Ex-president White has added to his gifts of portraits of distinguished jurists the portrait of John Marshall. What would now be of greatest aid to the College of Law is a gift for the permanent maintenance of the library. The bulk of reported adjudications is constantly on the increase; and a good library needs them all.

For further information concerning the College of Law see the report of Judge Finch. (Appendix IV, pp. XXV–XXVII).

THE COLLEGE OF AGRICULTURE

The total number of students enrolled in the College of Agriculture was 115, of whom, however, 60 were in the short winter course. For comparison with other years and other courses see pp. 16-17; and for age and geographical distribution of students at entrance, etc., see the Registrar's report. (Appendix X, pp. L, LIII, LIV). The increase in the number of students making a specialty of horticulture was commented on in last year's Report; and Professor Bailey has had this year a larger number than ever. The advanced entrance require-

[illegible] in conformity with the policy [illegible] outlined in last year's [illegible] has been changed from [illegible] Science of Agriculture. [illegible] absence for two terms, to [illegible] the leading countries of Europe. The [illegible] work which the College of Agriculture [illegible] State of New York has [illegible]. The legislative appropriation [illegible] contemplated work in [illegible] the appropriation [illegible] field was enlarged [illegible] State. [illegible] the State work was prevailingly [illegible] has induced the [illegible] dissemination of leaflets [illegible] farmers, teachers, [illegible] extension department. [illegible] yet discovered [illegible] the State by means of [illegible].

In the experiment station division the State appropriation [illegible] the Federal appropriation greatly to the [illegible] work in hand. During the year eighteen [illegible] pages and [illegible] illustrations. The increasing demand for these publications shows [illegible] the farmers of the State.

The College of Agriculture still needs a home, of which the [illegible] building should be only a single wing. The [illegible] encroachments of the campus on the farm have [illegible] land for the experimental and illustrative work of the college, and another farm should be purchased at the earliest possible date.

For further information concerning the College of Agriculture see the report of the director, Appendix V, pp. XXVIII-XXXII.

THE NEW YORK STATE VETERINARY COLLEGE

This college was opened at the beginning of the academic year 1896-97 with a faculty of remarkable strength, as described in last year's Report. As in the preceding year, the item of $25,000 for maintenance was included in the appropriation bill, which provides for the support of the State government and State institutions. The organization of the institution was completed by the passage of an act providing for its administration, which was approved by the governor May 22, 1897. The terms of this important act are as follows:

CHAP. 689

AN ACT to provide for the administration of the State Veterinary College, established by chapter one hundred and fifty-three of the laws of eighteen hundred and ninety-four.

Became a law May 22, 1897, with the approval of the Governor. Passed, three-fifths being present.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

SECTION 1. The State Veterinary College, established by chapter one hundred and fifty-three of the laws of eighteen hundred and ninety-four, shall be known as the New York State Veterinary College. The object of said veterinary college shall be: To conduct investigations as the nature, prevention and cure of all diseases of animals, including such as are communicable to man and such as cause epizootics among live stock; to investigate the economical questions which will contribute to the more profitable breeding, rearing and utilization of animals; to produce reliable standard preparations of toxins, antitoxins and other products to be used in the diagnosis, prevention and cure of diseases and in the conducting of sanitary work by approved modern methods; and to give instruction in the normal structure and function of the animal body, in the pathology, prevention and treatment of animal diseases, and in all matters pertaining to sanitary science as applied to live stock and correlatively to the human family. All buildings, furniture, apparatus and other property heretofore or hereafter erected or furnished by the state for such veterinary college shall be and remain the property of the state. The Cornell University shall have the custody and control of said property, and shall, with whatever state moneys may be received for the purpose, administer the said veterinary college, with authority to appoint investigators, teachers and other officers, to lay out lines of investigation, to prescribe the requirements for admission and the course of study and with such other power and authority as may be necessary and proper for the due administration of such veterinary college. Said university shall receive no income, profit or compensation therefor, but all moneys received from state appropriations for the said veterinary college or derived from other sources in the course of the administration thereof, shall be kept by said university in a separate fund from the moneys of the university, and shall be used exclusively for said New York State Veterinary College. Such moneys as may be appropriated to be paid to the Cornell University by the state in any year, to be expended by said university in the administration of said veterinary college, shall be payable to the treasurer of Cornell University in three equal payments to be made on the first day of October, the first day of January, and the first day of April in such year, and within thirty days after the expiration of the period for which each installment is received the said university shall furnish the comptroller of the of state of New York satisfactory vouchers for the expenditure of such installment. The said university shall expend such moneys and use such property of the state in administering said veterinary college, and shall report to the governor during the month of January in each year, a detailed statement of such expenditures and of the general operations of the said veterinary college. No tuition fee shall be required of a student pursuing the regular veterinary course, who, for a year or more immediately preceding his admission to said veterinary college shall have been a resident of this state. The tuition fees charged to other students and all other fees and charges in said veterinary college shall be fixed by Cornell University, and the moneys so received shall be expended for the current expenses of the said veterinary college.

§ 2. This act shall take effect immediately.

The entrance examinations to the college presuppose a full course of four years at a high school or preparatory academy. As these demands are much higher than the veterinary profession has hitherto made, it is not to be expected that the number of students will at first be large. In 1896–97, there were enrolled in the college eleven students taking the full course and fifty-three taking the short winter course, besides a considerable number of University students taking bacteriology, anatomy, or other special branches. The director's report shows that, in spite of the drawbacks incident to an opening year, the work in all departments was admirably done.

It will be seen from the administration act that research into animal diseases is a not less important function of the Veterinary College than the teaching of students. In this respect the college stands in the same relation to the animal possessions of New York as the Agricultural Experiment Station stands to the farms, gardens, and orchards. The professors have entered zealously into the work of original investigation and experiment.

The equipment in comparative pathology and bacteriology is more complete than in any other department; and Professor Moore's experiments and investigations have awakened great interest both at home and throughout the State. Fruitful results have already been attained concerning contagious pneumonia in horses, contagious abortion in cows, swine plague, hog cholera, etc. In this connection, mention must be made of the important services which the college has rendered the State in dealing with outbreaks among the flocks and herds. Professor Moore, at the request of the Commissioner of Agriculture, visits the localities where diseases appear, makes an examination on the spot, and subsequently demonstrates the nature of the malady by a study of its products in the bacteriological laboratory. It is impossible to overestimate the value to the State of having in the faculty of the Veterinary College scientific experts for the performance of these delicate and important functions.

For further information regarding the New York State Veterinary College see the director's report. (Appendix VI, pp. XXXI–XXXV).

THE COLLEGE OF ARCHITECTURE

The number of students enrolled in the College of Architecture was 51. The work of the year was very efficiently performed. Of the retirement of Professor Babcock mention has already been made (p. 9). Associate Professor Osborne is to be absent on sabbatic leave in 1897–98. Unusual responsibilities will, therefore, devolve upon the new faculty; and in order that the public may understand what changes are proposed, it has seemed advisable to print as the annual report from this college a statement of the aims of the faculty, the programme they have adopted, and the means which they deem desirable or indispensable for the attainment of these objects. Such a communication has been prepared by Professor Trowbridge, the professor in charge of the college (see p. 14, and Appendix VII, pp. XXXVI–XXXVIII).

The most striking feature in the policy of the faculty is the great accentuation of the work in architectural design, which becomes the central subject of the course. This work is in charge of Assistant Professor Van Pelt, whose qualifications have been elsewhere described (p. 14); and it has been arranged that every member of the faculty, including the professor in charge, is to aid Assistant Professor Van Pelt in special phases of design. An invaluable inspiration to every member of the college will be found in the drawings in architectural design, the architectural sketches, and the decorative designs which the Trustees authorized Assistant Professor Van Pelt to purchase in Paris as specimens of the best French workmanship. The work in freehand drawing for which Instructor Brauner was secured last year has been greatly extended, and the further advantage has been obtained for the sophomores that their drawing shall henceforth be done in the museum of casts,—"an environment full of inspiration and help," as Professor Trowbridge truly says.

The college needs an additional teacher who, if a suitable candidate can be found, should take charge of the history of architecture. Another desideratum is an endowment for a traveling fellowship, which, as the architect's materials are nearly all in the Old World, may be described as a really urgent and imperative need for the encouragement and stimulus of our most advanced students.

THE COLLEGE OF CIVIL ENGINEERING

The number of students enrolled in the College of Civil Engineering was 150. For comparison with other years and other courses see pp. 16–17; and for age and geographical distribution of students at entrance, etc., see the Registrar's report. (Appendix X, pp. L, LIII, LIV).

The attendance in this college showed a considerable increase in 1896–97, which may also be expected for 1897–98, the last year of the present low entrance requirements. The advance in the entrance standards, which goes into effect in 1898, will doubtless lead to a diminution of numbers; but the preparation, and perhaps even the capacity of those who are admitted will be of a higher quality.

The great hydraulic laboratory described in last year's Report is not yet completed, and it is doubtful if it will be ready for use before the opening of the University in 1898. Meantime the conception of it, and the plan as well, have been briefly commended by distinguished engineers both at home and abroad. The programme of work contemplated by the director, when he is put in possession, will be found anticipatorily described in his report.

The University gives the State the free use of rooms in Lincoln Hall for the State Meteorological Bureau, and the services gratuitously rendered to the Bureau by the director of the College of Civil Engineering make heavy demands upon his time. The sacrifice is borne, however, partly for the sake of the incidental advantage to the University (in the matter of data for the study of climate, water supply, etc.) but mainly for the sake of the larger interests of the commonwealth. If the legislature at any time deemed it wise to abolish the Bureau, it would be no injury to Cornell University, though many of its members would realize that the policy was shortsighted and unwise from the point of view of public interest.

For further information regarding the College of Civil Engineering see the director's report. (Appendix VIII, pp. XXXVIII–XLIII).

THE SIBLEY COLLEGE OF MECHANICAL ENGINEERING AND MECHANIC ARTS

The total number of students enrolled in the undergraduate courses of Sibley College was 473, of whom 30 were college graduates. In the Graduate Department there were 18 students in mechanical engineering and electrical engineering. For comparison with other years and courses, see pp. 16–17, and for geographical distribution of freshmen, age at entrance, etc., see the Registrar's report. (Appendix IX, pp. L, LIII, LIV).

The attendance has not yet recovered from the effects of the advanced entrance requirements which went into operation in 1894. The graduating class of 1897, which was the largest in the history of Sibley College, was the last which entered before the institution of the present high standards for matriculation. The classes of 1898, 1899, etc., will, if smaller at graduation, rank in scholastic attainments with former graduates of a year's standing. This great advance in the character and extent of the work now done in Sibley College is the most marked characteristic of its recent history. One of its results is that graduates of other institutions who were formerly admitted into the Graduate Department are remitted to the senior class, and those graduates of other institutions who formerly became seniors are now required to register as juniors. Notwithstanding the reduction in attendance consequent upon the raising of the standard for admission, the graduating class will in numbers far exceed those of any other engineering school.

The graduates of Sibley College go mostly to industrial establishments, where scope is found for the practical utilization of their scientific attainments. But large numbers are engaged in journal service and in teaching. And Director Thurston reports that they may be found "teaching in any state in the Union." The revival of trade and industry is likely to increase the demand of the business world for them.

The practical side of technical education has always been emphasized in Sibley College. Through purchase and gift the institution is now in possession of a large and valuable equipment, but it needs constant additions and renewals; the public, it is hoped, will enable the Board to keep it abreast of modern demands. In addition to work in the shops and laboratories of Sibley College, the more advanced students are permitted and encouraged to conduct investigations outside of the college, and admirable facilities have been offered, not only in the belt of cities encompassing Ithaca—Rochester, Elmira, etc.—but even in places as distant as Washington and Boston. This scientific and technical research in professional fields outside has afforded valuable training to the students, while relieving the pressure upon the Sibley laboratories, and supplementing the function they discharge.

The original investigations of the Sibley staff, so far as published during the past year, are mentioned in Appendix XIII. Director Thurston also calls special attention to the experimental studies of Professors Durand, Carpenter, Ryan, and Barr. (Appendix IX, p. XLVII). The whole makes a very impressive and significant exhibit.

The teaching and research work of Sibley College should strongly commend it to the support of public-spirited citizens.

The foundations were laid broad and deep; a structure has been reared of commanding proportions; but extensions and improvements are now loudly called for by the progress of mechanical engineering itself. There is truth and soberness in the mingled dissatisfaction and enthusiasm of the director's words: "Our needs are still great and numerous, and our opportunities for extending and broadening and advancing our work are without parallel, here or elsewhere." For a specification of those needs see the director's report. (Appendix IX, pp. XLIII–XLVIII, especially p. XLVIII).

THE LIBRARY

The report of the librarian (see Appendix XI) shows that during the year ending July 31, 1897, there were added to the general library 10,005 volumes, of which approximately 28 per cent came as gifts, the remainder, or rather more than 72 per cent, being purchased from the income of the Sage endowment fund. The present extent of the library is nearly 200,000 volumes and over 33,000 pamphlets. The great value of the Sage endowment, as providing for continuous growth in size and effectiveness of this vital centre of the University cannot be overestimated. The purchases made from the income of this fund are too numerous for description, constantly including as they do, every division of the immense educational field covered by the University. Deserving a special mention, however, are a collection of 2,000 dissertations on the works of the Greek and Roman philosophers, and sets of annals, periodicals, etc., dealing with archæological, literary, scientific, and other matters.

The gifts received during the year aggregated 2,776 volumes. The largest giver, as was the case in 1895–96 has been Mr. Willard Fiske, who has added more than 900 volumes to the Dante collection, which now numbers 6,031 volumes. His Highness the Maharajah of Jeypore has presented the library with a set of the valuable Jeypore portfolios of architectural details. Hon. Andrew D. White, Mr. Botterel, of Ottawa, Mr. F. E. Tibbetts, '72, Mr. Theodore Stanton, '76, Mr. M. E. Poole, '80, and Professors Burr, Caldwell, Crane, and Hart are among the individual givers of the year, while the Lords Commissioners of Her Majesty's Treasury, the U. S. Coast and Geodetic Survey, the national and state governments, the British and Canadian Patent Offices, have given us many valuable official reports, charts, etc.

Excellent progress in the cataloguing of special collections has been made. The first portion of the Dante catalogue, consisting of the list of editions of the Divina Commedia, is now in type. The printing of that portion of the catalogue of the White Library containing the finding list of the miscellaneous division has been completed, and work has been begun on the final portion, which will catalogue the works dealing with the history of superstition and persecution. The binding and cataloguing of the pamphlets of the Zarncke collection has been completed during the year.

A noticeable feature of the year is the increase in the number of advanced students to whom permission was given to consult books in the stacks. It is unfortunate that this privilege is attended with the practical drawback that so many books are misplaced, on the average, two volumes to each press during the year. The department collections have also suffered from loss—55 volumes being missing on July 31st out of 6,483 deposited in the different buildings.

Among minor improvements, mention may be made of the new card-cases, which while occupying the same floor spaces as the old, double their capacity and provide for 556,000 cards. A map room with cases of wide shallow drawers for the reception of the growing collection of mounted maps has been procured by partitioning off with a glass screen the inner end of the large room used by the political science seminary.

For further information in regard to the library see the librarian's report. (Appendix XI, pp. LVIII–LXI).

SAGE CHAPEL AND BARNES HALL

In Sage Chapel the University continued to provide Sunday morning services during all three terms of 1896–97, experience having shown this to be the most satisfactory system. The wide territory which the Dean Sage preachership endowment allows the University to draw its preachers from, and the entire impartiality of the selection may be seen from the list of those who occupied the University pulpit during the past year. In two instances the expected preacher was detained, and the pulpit was occupied by a member of the faculty. In the remaining twenty-eight Sundays there preached in Sage Chapel three Episcopalians, four Methodists, four Congregationalists, five Unitarians, five Baptists, five Presbyterians, one Reformed Episcopalian, and one Swedenborgian. Of these gentlemen, fourteen were from churches in this State, seven of them from New York City, four from Brooklyn, two from Buffalo, and one from Nyack; and thirteen from other states, of whom three each came from Massachusetts and Pennsylvania, two each from Illinois and Connecticut, and one each from Rhode Island, California, and Michigan. The twenty-eighth came from the city of Washington. In all cases the most representative preachers of the various denominations are selected. The privilege of listening for four years to such a succession of the greatest religious teachers of the age is one of the most valuable advantages enjoyed by students in Cornell.

Unfortunately, the seating capacity of Sage Chapel proves yearly more inadequate. It was erected in 1873–74 to provide opportunities of religious instruction for a university of five hundred students. It cannot, therefore, be a matter of surprise that it fails to provide entirely for the needs of the present University body of approximately two thousand students. Again and again during the past year the President was appealed to by the students to transfer the services temporarily to the larger auditorium of the Armory. Twice this extraordinary expedient was actually resorted to, and in each case the number of students attending the services was three times the largest figure possible to Sage Chapel. It is much to be desired that the Chapel may soon be enlarged to provide more fully for the needs of a student body which has grown nearly fourfold since its erection.

The students banded together in the Cornell University Christian Association most effectively supplement the services held in Sage Chapel. Two objects are kept steadily in view by them, the betterment of the religious and social life of all the students, and the special training of the few who are expected to become religious leaders. For the benefit of all, nine large and earnest Bible classes were conducted in 1896–97, a series of class prayer meetings was held throughout the year, and a course of Sunday lectures on religious topics was provided. Those intending to devote all or much of their lives to church work regularly conducted Sunday services in several localities in the neighborhood of Ithaca, and studied together the history and methods of mission work. By class receptions and similar means Barnes Hall was as usual made a unifying factor in the life of the students. It is a matter for congratulation that the Cornell University Christian Association increased its student membership nearly 30 per cent during the year, and that it enjoyed a year of financial prosperity, during which a considerable reduction was made in the deficit handed down from former years.

THE UNIVERSITY GROUNDS

Extensive changes have been made during the year in the Fall Creek gorge. The great hydraulic laboratory and canal described in the last Report (pp. 57–58) are not yet completed, though the latter approaches completion. In connection with these improvements in the equipment of the College of Civil Engineering, it has been deemed advisable, after careful study and expert advice, to make new and enlarged provisions for the water and power supply of the University. A new dam, fifteen feet below the old Beebe or Triphammer falls dam, and ten feet higher, has been constructed in the course of the summer; and between that point and Forest Home an artificial lake containing 53,000,000 gallons of water will soon fill the valley whose bottom was till recently covered with a tangled growth of trees and brush or carpeted with violets.

The arched dam just completed above the falls spans the gorge at a point where nature has done much to assist in the work. A natural shoulder of rock projects from the north bank half way across the valley at the site of the old Beebe dam and rises, with level upper surface, to a height ten feet above the wide bay locked between the sides of the valley and the narrow gorge at Forest Home. This level has been continued across to the south bank by the new concrete dam, and an artificial lake has thus been formed which will afford storage of water for power purposes, extend the facilities of the new hydraulic laboratory, improve the campus water supply, and, it is hoped, materially add to the beauty of the University property in this neighborhood. The dam is thirty feet high at the deepest section, and is anchored securely into the bed rock of the stream and the ledge to the north. At the south end it merges into the partition wall turning eastward to the head gates of the laboratory canal and protecting its lower level from the waters of the lake. The finished dam and gate house, which are built of concrete, practically form a monolith. It is homogeneous throughout, the same care and quality of materials being used in the interior of the structure as on its outer faces. Its curved form gives added strength and beauty. On the downstream face the dam has been finished in a series of steps, designed to break the force of the water during heavy floods and so prevent undermining of the foundations. As an additional measure of safety, the narrow space between the former Beebe dam, which is left standing, and the new structure is to be rammed with puddled clay.

The rocky promontory north of the dam has been stripped of trees and soil down to the rock ledge and leveled one foot below the upper surface of the dam. This area will form the spillway, and, during the major portion of the year, will carry the natural flow of the stream in a thin wide-spreading sheet covering its entire area and discharging into the narrow defile below the dam and above the fall. The slope on the north end of the spillway is being paved to protect the banks from floods which may rise to depths exceeding four feet over this area and three feet over the crest of the dam.

The lake formed above the dam will cover an area of twenty-three acres, submerging the islands under eight feet of water, and rising six feet above the present level at the base of the fall near Forest Home. Its storage of 53,000,000 gallons, available for increasing the stream flow for power and laboratory purposes in seasons of drought, may be further increased by adding flash-boards over the dam and spillway. Provision for this purpose is being made in the construction.

In clearing the surface of the reservoir to prepare for flooding it has not been thought best to adopt the extreme policy of removing the surface soil, as practiced by the Metropolitan Water Board, in preparing similar reservoirs for the Boston water works. A large portion of the area to be covered is formed of gravel and detritus brought down by the stream from its upper reaches. This will form an admirable bottom for the new reservoir. The areas covered with vegetable mould are not in a condition to affect seriously the quality of the water after the entire basin has been burned over and cleared of all perishable matter. This treatment of the bottom accords with the practice of the New York engineers in preparing storage reservoirs on the Croton watershed. It is believed that the removal of the decaying stumps and vegetation in the basin, together with the increased area and volume of the reservoir, will cause a decided improvement in the quality of the water delivered on the campus.

A 48-inch riveted steel conduit leads from the gate house at the dam and will supply water to the turbines and power plant below. The details of the experimental canal, the 72-inch steel standpipe for laboratory uses, and the laboratory building under the cliff, below Triphammer falls, were referred to at some length in the Report for 1895-96. These constructions are now rapidly approaching completion and it is expected that the lake may be filled in December. The natural beauty of the gorge in the vicinity of Triphammer falls is to be restored so far as possible at the completion of the work—the new structures being designed to harmonize with their surroundings.

These improvements include, besides the dam, laboratory, canal, and pumping and power houses, a new system of sewers and water mains for the campus. The outlay for the completed works will naturally be very heavy. But it is for a permanent improvement, and one greatly needed, as the present facilities for supplying water, power, and electric light to the University have become with the growth of the institution altogether inadequate. Fortunately the expenses have been reduced, and at the same time the highest excellence known to engineering science secured, both in design and workmanship, by the generous devotion of an Alumni Trustee, Mr. Frank S. Washburn, C.E., who at no small sacrifice of time and energy made the plans for all constructions and supervised, and continues to supervise, their execution.

The Trustees having authorized the extension of the electric railway from President's Avenue along East Avenue and across the Fall Creek gorge to the private property on the other side, a steel arch bridge, whose plan they have approved, is now in course of construction across the Fall Creek gorge, at a point about half way between the Triphammer falls and Sibley College. The bridge is of the form known as the girder arch—the lower chord being formed of a five foot plate girder. Latticed posts rise to support a roadway twenty-four feet in width flanked by two five foot walks. The roadway descends to the north, on a grade of three and one half feet to the hundred. The span between supports will be 170 feet, and the rise 34 feet. The excavation for the abutments has been completed, the masonry is in place, and the construction of the false work has been begun. It is expected that the bridge will be in place by December first. Its lines are graceful, and in accord with the natural beauty of the environment.

In authorizing all these changes in the Fall Creek gorge, at a point, too, where the scenery is especially varied and romantic, the Trustees have shown great solicitude to preserve the unequalled beauty of the campus; and though the structures described cannot but make a difference, it is hoped and believed that the studied art of man will so blend with the careless and prodigal grace and charm of nature that old students returning to visit Alma Mater may not be conscious of any serious æsthetic sacrifice, while they will probably regard the artificial lake as an enhancement of the scenic beauty. At any rate, in meeting the inexorable demands of the material utilities of the University the Board are jealously tender of those noble beauties with which nature has so liberally endowed the institution.

The beautifying of the campus has been pushed forward energetically by Professor Rowlee, who has been officially appointed superintendent of the ornamentation of grounds. His work has embraced the grading, laying out, and planting of the grounds about the New York State Veterinary College, of the park lying east of Cascadilla Place and south of Cascadilla

During the year following, he studied Greek with Professor Gildersleeve at the Johns Hopkins University. He then studied Greek and comparative philology at Leipzig and Heidelberg for two years. 1882–83 he spent as assistant professor of Greek and German at Hamilton College, and 1883–88 as assistant professor of Greek. In 1888 he was appointed assistant professor of Greek in Cornell University, and in 1890 associate professor. He has from time to time contributed articles and reviews to philological and educational journals, and has published Selected Orations of Lysias.

Walter Francis Willcox, hitherto associate professor, was appointed professor of social science and statistics (the appointment to take effect August 1, 1898). Mr. Willcox was born in eastern Massachusetts in 1861. He prepared for college at Phillips Academy, Andover, and was graduated with honors from Amherst College in 1884. During a part of the following year he was instructor in Latin at his Alma Mater, but resigned at the close to prosecute his studies in other fields. Between 1885 and 1887, he worked in the schools of law and political science at Columbia College. At the beginning of his second year there, he received from the college a fellowship in political science, and, at its close, the degree of LL.B. At the same time he was admitted to the bar in New York City. Preferring teaching to the practice of his profession, he returned to Amherst College for a year as lecturer on law and instructor in philosophy. Thence he went to Yale for a year of graduate work in philosophy and theology, and ended his career as a matriculated student with a year in the University of Berlin His doctor's thesis,—The Divorce Problem, A Study in Statistics,—was presented to the faculty of the school of political science at Columbia College soon after his return, and publishe under their editorial supervision in 1891. In the spring o 1891 he was appointed instructor in philosophy in Cornell University. In 1892, he was appointed assistant professor of socia science and statistics in this University, and in 1894 associat professor. Aside from a number [illegible] ethical an sociological books, contributed [illegible] ilosophic Review, his published articles h[illegible] xclusivel statistical, treating of the birth [illegible], divorc

von den anderen seltenen Erden durch stickstoffwasserstoffsaures Kalium, Zirconium Tetraiodide, Some New Compounds of Thallium, Contributions to the Chemistry of Didymium, The Compounds of Hydronitric Acid, and A New Discharger for Spark Spectra.

Henry Sylvester Jacoby, hitherto associate professor, was appointed professor of civil engineering in charge of bridge engineering and graphics (the appointment to take effect August 1, 1900). Mr. Jacoby was born near Springtown, Pennsylvania, in 1857. Obtaining his preparatory training in the Carversville Normal Institute and the preparatory department of Lehigh University, he entered the latter institution in 1873. In his sophomore year he won the Wilbur scholarship, and upon his graduation, in 1877, with the degree of C.E., he was elected to membership in the honorary society of Tau Beta Pi. 1877-78 he spent in work on the Second Geological Survey of Pennsylvania. He was next employed, under the direction of an officer of the U. S. Corps of Engineers, on the Red River of the South. Near the close of 1879 he was assigned to the draughting department of the U. S. engineer office at Memphis, Tennessee, and for nearly six years he was in charge of this department, the work in which related to river and harbor improvement on the Mississippi and its lower tributaries. During this period also he made a survey of the Memphis harbor and adjacent reach of river. In 1886 he was called to his Alma Mater as instructor in civil engineering. In 1890 he was appointed assistant professor of civil engineering, in charge of bridge engineering and graphics, in Cornell University, and in 1894 associate professor. Mr. Jacoby is author of Notes and Problems in Descriptive Geometry, Outlines of Descriptive Geometry, and a Text-Book on Plain Lettering, and with Professor Mansfield Merriman he is joint author of a Text-Book on Roofs and Bridges. He has also contributed a number of articles to engineering periodicals. In 1887 he was elected a member, and in 1892 a fellow of the American Association for the Advancement of Science, and in 1895 he was secretary of Section D of this Association. He is an associate of the American Society of Civil Engineers, a member of the honorary society Sigma Xi, and a member of the Society for the Promotion of Engineering Education.

John Henry Barr, hitherto associate professor, was appointed professor of mechanical engineering (the appointment to take effect August 1, 1900). Mr. Barr was born in Terre Haute, Indiana, in 1861. He obtained his secondary education in public schools in Minnesota, in the Minnesota State Normal School, and in the preparatory department of the University of Minnesota. From that university he graduated in 1883, a year ahead of his class, with the degree of B.M.E. After graduation he found employment as draughtsman and special assistant to the mechanical engineer of the Calumet and Hecla mine. In 1884 he became mechanical engineer to the Lake Superior Iron Works. In the fall of 1885 he was appointed instructor in mechanical engineering in his Alma Mater. The summer of 1886 he spent as inspector of the building for the college of mechanic arts of that institution, and in selecting its equipment. Upon its completion he was put in charge of the shops and mechanical laboratory, giving instruction also in other engineering branches. Receiving the degree M.S. from the University of Minnesota in 1888, he spent the following year upon leave of absence, studying in Sibley College, Cornell University, and receiving the degree M.M.E. from Cornell in 1889. During the summer of 1889 he spent four months in Europe, where he wrote a report for the U. S. Commissioner General on the machine tools of the Paris Exposition. In the fall of 1889 he entered upon an assistant professorship of mechanical engineering in the University of Minnesota, which was made a full professorship in the following spring. In 1891 he was appointed assistant professor of mechanical engineering in Cornell University, and assigned the work in machine design, which continued his province upon his election to an associate professorship in 1895. Since his coming to Cornell University, he has, outside of professorial duties, acted as expert in testing plants, and written for technical papers and for the American Society of Mechanical Engineers, of which he became a member in 1889. He has written, and privately printed for class use, two sets of notes on kinematics.

Joseph Ellis Trevor, hitherto assistant professor, was appointed professor of general chemistry and physical chemistry (the appointment to take effect August 1, 1900). Mr. Trevor was born in Lockport, New York, in 1864. He obtained his secondary education in the Lockport Union School, and after some years in business life, he entered Cornell University in the fall of 1888. After two years in this university he went to Germany, and continued his studies in the University of Leipzig, where he took the degree of Ph.D. in 1892. In that year he was appointed to an assistant professorship of general chemistry and physical chemistry in Cornell University, which he has since filled. Mr. Trevor has published the results of numerous researches in experimental and mathematical physical chemistry, and with Mr. Wilder D. Bancroft he founded the Journal of Physical Chemistry, in 1896.

Alexander Buel Trowbridge was appointed professor of architecture. Mr. Trowbridge was born at Detroit, Michigan, in 1868. He obtained his secondary education in the public schools of that city, and entered Cornell University in 1886. Graduating in 1890 with the degree of B.S. in Architecture, he continued the study of architecture in Boston, Massachusetts, with William R. Emerson, Edmund M. Wheelwright, and Winston and Wetherell. After a stay of three years in Boston he went to Paris. There he passed the examinations for admission to the Ecole des Beaux Arts, studying in the atelier of Marcel Lambert, one of the Government Architects of France. After two years in Paris, Mr. Trowbridge returned to this country, and began the practice of architecture in his native city of Detroit as a partner in the firm of Nettleton, Kahn, and Trowbridge.

John Vredenburgh VanPelt was appointed assistant professor of planning and design in the College of Architecture. Mr. VanPelt was born in New Orleans, Louisiana, in 1874. His studies, up to the age of fourteen, were pursued in private schools in Germantown, Pennsylvania. He then went to France, where he began the regular study of architecture in the Ecole des Arts Decoratifs. In May, 1890, he entered the studio of Messrs. Douillard et Thierry, and a few months later took the examination for entrance to the Ecole des Beaux Arts. In 1892 he secured admission to the first class in the Ecole des Beaux Arts. The "projet" presented at this time was exhibited at the Columbian Exhibition. In

1895 Mr. VanPelt secured his diploma, with the degree of Architecte diplomé par le Gouvernement (A.D.G.). He was the first American to earn this degree, although he did not receive it until five months later, when two other Americans were ready and received the degree with him. Since that time he has been practicing the profession and continuing his studies in the Atelier Deglane, Paris. Mr. VanPelt's career has been successful throughout, and he has won a constant succession of prizes, first mentions, medals, etc.

Frederick Clark Prescott was appointed assistant professor of rhetoric. Mr. Prescott was born in Salina, Kansas, in 1871. Having obtained his preparatory training in the West, he entered Harvard University in 1890, graduating in 1894 with the degree A.B. *magna cum laude.* After one year of graduate study, chiefly English, in the same institution, he was appointed to the instructing staff in English, under Professor Baker. In this position, which he held up to his present appointment, he gave instruction in English composition. Mr. Prescott's work and interest have been largely in the field of argumentative composition, which he will teach here.

STUDENTS

The total number of persons receiving instruction at the University in 1896-97 was 2062. Exclusive of those attending the Summer Schools, and the Winter School in Agriculture, there were regularly enrolled 1808 students. This is the largest attendance ever registered, exceeding that even of 1893-94, which was the last year of low entrance requirements for the great majority of undergraduates, and of free tuition for all graduates. When we consider the enormous advance, extensive and intensive, which has been made in the entrance requirements annually since 1894, we find every reason to congratulate ourselves upon the hold which the University has obtained upon the country. It seems too much to expect that when these advanced requirements shall have been extended in 1897, and completed in 1898, the attendance will remain on the present level, but the history of the University fortunately shows that adverse predictions are exceedingly risky.

The following table, which embraces the last six years, has been prepared to exhibit in detail the attendance for the years preceding and succeeding 1894, when the entrance requirements began to be raised for undergraduates, and tuition fees were first charged to graduates:

	1891-2	1892-3	1893-4	1894-5	1895-6	1896-7
Arts	142	141	138	133	146	170
Philosophy	100	110	121	136	153	155
Science	82	89	89	115	144	159
Letters	94	82	85	65	50	27
Law	122	176	197	191	207	239
Civil Engineering	139	129	116	122	121	150
Mechanical Engineering	251	295	239	212	201	230
Electrical Engineering	250	260	332	289	295	243
Architecture	68	78	97	76	67	51
Agriculture (4 year course)	22	22	25	24	30	34
Veterinary Medicine		---	---	---	---	11
Medical Preparatory	12	11	5	6	4	8
Optional and Special	122	137	126	132	139	170
Graduate Department	177	170	231	188	145	161
Total in University,	1538	1700	1801	1689	1702	1808

A detailed study of the above table yields some interesting results. The courses in mechanical and electrical engineering and in architecture, for admission to which an additional year's training in the higher mathematics was required of those entering in the fall of 1894, over and above what was required of those entering in the fall of 1893, were the first to show a falling off. Taken together, we find in these three courses 91 less students in 1894-95 than in 1893-94, and a still further decrease of 14 in 1895-96, and of 39 in 1896-97. Taking the courses in mechanical and electrical engineering by themselves, we find in them 70 less students in 1894-95 than in 1893-94, 5 less in 1895-96 than in 1894-95, and 23 less in 1896-97 than in 1895-96. In architecture, we find in 1894-95 21 less than in 1893-94, in 1895-96 9 less than in 1894-95, and in 1896-97 16 less than in 1895-96. The effect was next felt in those courses now grouped together in the Department of Arts and Sciences, namely arts, philosophy, science, and letters. Of these the last named was abolished, no more students being allowed to enter in letters after 1895-96; in science the class entering in 1896 were required to present one year more of work in the modern languages than their predecessors, and the class entering in 1897 will be required to present two years more of work in modern languages, and one year in the higher mathematics, in addition to the preparation exacted of those who entered in 1896; in philosophy those entering in 1896 were required to present one year more of the modern languages than their predecessors. The requirements in arts have remained steadfast. It must be said that the effect of the first increase in the difficulty of entering the courses in science and philosophy, which should appear in the figures for the past year, does not show in a comparison with the figures of the same courses for the previous year, there being in each course a slight increase, 2 in philosophy, 15 in science. But this is no doubt mainly owing to the abolition of the course in letters, which went into effect simultaneously with the increase in requirements for these two courses. As a result, each probably drew from letters rather more than enough to hide the effect of the rise in requirements. That this effect was nevertheless felt is evident by comparing the increase in philosophy and science with the increase in arts, which registered 170 in 1896-97 as against 146 in 1895-96. As a whole, the Academic Department, in spite of the abolition of the course in letters and the advance in the entrance requirements in science and philosophy, has expanded from an enrollment of 493 in 1895-96 to 511 in 1896-97, thus maintaining the continuous annual increase to which attention was called in the Report for 1895-96 (pp. 17-18). In civil engineering, law, and agriculture, no considerable increase in the demands for admission has yet been made, and the attendance in each of these three courses has consequently reached the largest figures ever recorded. Meanwhile the Graduate Department, after showing the effects of requiring payment for tuition by falling off sharply in 1894-95, and again in 1895-96, began in 1896-97 to recover its former numbers. The course in veterinary medicine makes its appearance for the first time in the 1896-97 column, with an attendance small, yet promising as a beginning.

The Summer School, including the Summer School of Law, registered this year 194 students as against 237 in 1895-

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rate, rate of migration, etc., in this country or its parts. They are being worked over, with new material, into a book on the Social Statistics of the United States, the introductory chapters of which have just been published by the American Economic Association. Mr. Willcox is a member of the American Social Science Association, and of the publication committee of the American Statistical Association, advising editor of the American Journal of Sociology, and secretary of the American Economic Association.

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but in 1880 he removed to Ithaca—the home of his boyhood and early manhood—where with ever-increasing delight in the beauty of the scenery he spent the remaining years of his life. He had thus for seventeen years been locally associated and for twenty-seven years officially connected with Cornell University. And the record of his labors and services and gifts to the University during that period constitutes a chapter which will long be remembered in the history of higher education in this country.

It is impossible for anyone who has not seen Mr. Sage, day after day, year in and year out, driving about the campus, while he directed the erection of buildings, the laying out of grounds, and the innumerable and multifarious details of repairs and alterations, to form any just conception of the enormous amount of work which the material face of the University, as we see it to-day, owes to his skilled and experienced hand. At the same time he kept himself as thoroughly conversant with the financial condition and operations of the institution as with his own personal business, and in large part he bore the responsibility of financial management and control. Nor was he, man of affairs though he was, unacquainted with the needs and aspirations of the various departments of instruction, whose heads always found in him an intelligent, a sympathetic, and a helpful patron.

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XIII. Pu
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Founder had saved for his University. It seems more than accidental, we may in all reverence describe it as providential, that while in all the States of the Union only one man—Ezra Cornell of New York—had the prescience to foresee the eventual appreciation of the value of the lands granted by Congress for educational purposes, and at the same time the wisdom to devise the means for husbanding them, in this State also, among his friends, in the person of his successor as Chairman of the Board, there was a man whose training and experience, whose imagination and judgment, qualified him to realize for the University out of that landed estate more than even the Founder ever dreamed of.

By his services and donations Mr. Sage has writ his name large in the history of Cornell University. They entitle him to perpetual recollection as our Second Founder. And they will often be recalled by the generations who follow us as they continue to enjoy the fruits of this benefactor's liberal sowing. But we over whom Mr. Sage presided in this Board, and all who knew him personally, cannot help feeling that more precious even than his gifts and labors was the spirit in which he performed them,—the absolute disinterestedness of the man unalloyed by any taint of self-seeking or egotism, his deep and solemn sense of duty, the breadth and tenderness of his sympathies, his unquenchable hopefulness, his piety, his faith in the moral and intellectual progress of mankind, his earnest and effectual interest in the cause of education, and his love and devotion to this University as a great and beneficent agency for promoting the highest ends of civilisation and the best welfare of the Republic. In this spirit of our departed friend, and in all the noble qualities of his heart and mind and character, he has left us a heritage of priceless worth as a model and exemplar for successive generations of Cornellians."

The Trustees also mourn the loss by death of another colleague, Colonel George Bliss, of New York City. Though Colonel Bliss had been in the Board only about a year, he showed much interest in the welfare of the University; and his genial presence and wise counsel will be greatly missed by his fellow Trustees.

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Andrew D. White, LL.D., the first President of the University, and Stewart L. Woodford, LL.D., who as Lieutenant-Governor of New York represented the State at the opening of the University, have with the general and cordial approval of their fellow citizens been sent to foreign courts as diplomatic representatives of their country, the one as Ambassador to Germany and the other as Minister to Spain.

Vacancies in the Board were filled as follows:

SAMUEL D. HALLIDAY, elected by the Board, succeeded Samuel D. Halliday, term expired, June 16, 1897.

HENRY W. SAGE, elected by the Board, succeeded Henry W. Sage, term expired, June 16, 1897.

GEORGE B. TURNER, elected by the Alumni, succeeded George B. Turner, term expired, June 16, 1897.

MYNDERSE VAN CLEEF, elected by the Board, succeeded Mynderse Van Cleef, term expired, June 16, 1897.

FRANK S. WASHBURN, elected by the Alumni, succeeded Frank S. Washburn, term expired, June 16, 1897.

ROBERT H. TREMAN, elected by the Board, succeeded Robert H. Treman, term expired, June 16, 1897.

THE FACULTIES

The reorganization of the faculties, as described in last year's Report (pp. 33–38), went into operation at the opening of the year under review. The experience of the year has fully vindicated the wisdom of the change, and happily disclosed the groundlessness of the anxiety with which even the most hopeful advocates of the measure contemplated its initiation. The greatest danger was that of conflict of jurisdiction between the special faculties and the University Faculty; but, through the good sense of all parties, perfect harmony has been maintained, and a number of precedents have been established which in great measure settle definitively issues which, if raised captiously or even abstractly, might have proved a source of no little vexation and disturbance. The members of the instructing staff are unanimous and enthusiastic in their approbation of the new system, and often express wonder that the old was tolerated so long. The chief excellencies of the present organization are that each faculty deals with its own students, and with no others, and that, as a consequence, while the work is more efficiently done, no professor is called upon to give to faculty meetings more than a quarter of the time which was necessary under the cumbrous machinery previously in operation.

In March last, Professor Babcock resigned his office as director of the College of Architecture and professor of architecture. Professor Babcock became a member of the faculty in 1871, three years after the University opened. During all this time he has labored with zeal, diligence, and wisdom to build up a strong department of architecture at Cornell; and although he has often been crowded for space, and restricted in equipment, and supported by too small a staff, he succeeded in placing his department on a firm foundation and in developing it to such proportions that the Board last year raised it to the rank of a college. As a member of the faculty, Professor Babcock was a wise counselor and a pungent critic, and the solidity of his character gave emphasis to his remarks, which were always exceedingly brief. To the retirement which he has so justly earned he will carry the high esteem and appreciation of all his colleagues. In accepting his resignation, the Board of Trustees, to show the high regard in which they held Professor Babcock, besides making other appropriate arrangements, elected him professor of architecture *emeritus*.

The grade of associate professor having been abolished, the Board transformed some of the associate professorships into full professorships and others into assistant professorships, and others again they allowed to lapse. The following paragraphs indicate the promotions thus ensuing, as well as the other appointments to professorships and assistant professorships during the year:

George Prentice Bristol, hitherto associate professor, was appointed professor of Greek (the appointment to take effect August 1, 1898). Mr. Bristol was born in Clinton, New York, June 21, 1856. He graduated A.B. from Hamilton College in 1876, with first honors in classics, and in 1893 received A.M. from the same institution. During 1877–79, he taught Greek and Latin in the Delaware Literary Institute, Franklin, New York.

During the year following, he studied Greek with Professor Gildersleeve at the Johns Hopkins University. He then studied Greek and comparative philology at Leipzig and Heidelberg for two years. 1882–83 he spent as assistant professor of Greek and German at Hamilton College, and 1883–88 as assistant professor of Greek. In 1888 he was appointed assistant professor of Greek in Cornell University, and in 1890 associate professor. He has from time to time contributed articles and reviews to philological and educational journals, and has published Selected Orations of Lysias.

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impossible, to define them in advance of experience, and even as they arise it may often be a question whether they do or do not fall within the purview of some special faculty. But the good sense and moderation of the different faculties may be trusted to work out in the course of time a satisfactory delimitation of these debatable grounds. Possibly the work of the year under review may furnish a pregnant example for the future. Two special faculties—those of architecture and agriculture—voted to change the form of their first degrees, in the one case from Bachelor of Science in Architecture (B.S.) to Bachelor of Architecture (B. Arch.), and in the other from Bachelor of Science in Agriculture (B.S.) to Bachelor of the Science of Agriculture (B.S.A.). As a matter of courtesy they reported their action to the University Faculty. The question of jurisdiction was raised, but with the practical and compromising spirit characteristic of all Anglo-Saxon legislative bodies, it was left unsettled, while the University Faculty recognized as an accomplished fact the initiative of the two special faculties, and voted to approve of the action they had taken. As to the change itself, it may be noted that it was the final step in the simplification of first degrees. From this time on the University will have one first degree (A.B.) for the Academic Department,—a degree which connotes a four year course of liberal study after matriculation, and one first degree for each of the professional courses (LL.B., M.E., C.E., D.V.M., B.Arch., B.S.A.), which is at once a description of the course taken and a certificate of the graduate's fitness to enter upon the practice of his profession; and as has been pointed out above, the same simplification of degrees has also been effected in the Graduate Department. Cornell University stands for liberal culture and professional education; the goal of the former is the A.B., A.M., and Ph.D.; and the latter leads in each case through a prescribed course to a degree characteristic of the profession.

THE ACADEMIC DEPARTMENT

The number of students in the Academic Department in 1896–97, not including special students, was 593, which is the largest ever enrolled. For comparison with other courses see pp. 16–17, and for age and geographical distribution of students at entrance see the Registrar's report. (Appendix X, pp. L, LIII, LIV.)

In Dean Crane's report (see Appendix III, pp. XVIII–XXV), will be found a detailed account of the administrative work of the Faculty of Arts and Sciences, which has charge of the Academic Department. As the Dean observes, it was not to be expected that the year's legislation "could equal in interest and importance that of last year when the reorganization of the University was accomplished, and the new course in arts was created." Perhaps the most important legislation of the year was the amendment of the rule governing the election by juniors and seniors of studies in the College of Law, and the application of the rule as amended to the election of studies in any other college of the University. Under the regulation now established, juniors and seniors in the Academic Department are allowed, with the permission of the faculties concerned, to elect studies in any other college which shall count towards graduation in the Academic Department; but the sum total of hours so elected must not exceed the number required for one year's work in such college, nor exceed nine hours per week (i. e. half time) in any term. This action, while enabling undergraduates to shorten the courses for two degrees by one year, yet prevents their entire withdrawal from the Academic Department at that period of their studies when they are best fitted to profit by the instruction offered in the advanced courses.

From the reports of the heads of the several departments, which deal both with their graduate and undergraduate courses, the following facts are gathered, as specially indicative of their work, aims, and needs.

Professor Schmidt reports that during the first year of the newly established department of the Semitic languages and literatures, courses have been given in the Hebrew, Aramaic, and Arabic languages, in the Old Testament literature, and in oriental history. He outlines the aim of the department as being 1) to furnish adequate opportunities to linguistic students and to those preparing for the Jewish or Christian ministry of acquainting themselves with the Semitic languages and the Egyptian, 2) to present to those not familiar with the Semitic languages the results of scientific study of the Bible and other literary productions of the Semites, and 3) to offer to historical students the opportunity of studying the history of the East. He finds his work hampered by the lack of adequate library facilities, including both books and maps, upon which he considers $10,000 would be no more than an adequate expenditure.

Professor Wheeler returned from his year's work in the American School of Classical Studies at Athens to take up again his duties as head of the Greek department. He reports a most flourishing condition in that department, which registered in its classes during the three terms of the past year an average attendance of 264 as against 23 in 1885–86. Professor Wheeler points out that the attendance in Greek has during the eleven years of his connection with the University been multiplied by eleven and one half. This indicates at once an increase of classical study in the schools, and a gratifying increase of confidence in Cornell as a place for classical teaching. While anticipating some decrease in the numbers attending the less advanced courses, resultant upon the action taken in 1896 with regard to the A.B. degree, Professor Wheeler expects that the students taking them will, as heretofore, be seeking general culture, rather than training as specialists, and the character of these courses will therefore continue as at present. There has been established in lieu of the associate professorship of classical archæology, which shared in the general abolition of the grade noted in the last Report, a curatorship of the museum of casts, the incumbent of which will give instruction in archæology. To this office was appointed Mr. E. P. Andrews, whose feat of deciphering the inscription formerly on the Parthenon was noted in the last Report. Professor Wheeler urges the appointment of a specialist to teach Sanskrit and Zend, thus relieving his department of the instruction in those branches. While no new volume of the Cornell Classical Studies has been printed during the year, he announces that four volumes have been completed, and are now ready for publication.

Professor Bennett reports an encouraging number of the best students taking the elective work in Latin, and the presence of many graduate students in the more advanced courses.

Assistant Professor Elmer has returned from spending his sabbatical year in Europe, and taken up again his share in the instruction in this department. Mr. H. J. Edmiston having resigned his instructorship at the end of the year, Mr. Charles Love Durham, a graduate of Furman University, who held a fellowship here during the past year, has been appointed instructor in Latin. Professor Bennett finds the preparatory work in Latin of his students to be noticeably imperfect, and urges that steps should be taken to secure improvement in this respect.

Professor White reports that the German seminary has continued to form an important feature of the work of his department. The seminary room has during the year received two gifts, one a metal bust of Goethe from the outgoing members of the seminary for 1895–96, and the other a large plaster cast of the Trippel bust of Goethe, presented by Professor J. M. Hart. The attendance at the lectures on Goethe's Faust was eighty-four, the largest in the history of the department. The direction of the preparation of theses both for first and second degrees also makes increasing demands upon the department. During the past year a special course has been given by Professor White in the examination and translation of forms of correspondence, for which a large number of facsimiles of German chirography, as well as a mass of original letters, were available; and for the coming year he has offered a new "teachers' course." Professor White reiterates the statement made by him in previous reports that there is pressing need in the German department of additional scholarships and fellowships. Since the last Report Dr. L. A. Rhoades has accepted an assistant professorship elsewhere, and the instructorship in German thus made vacant has been filled by the appointment of Mr. G. B. Viles. Professor Hewett returned from his visit to Europe last summer upon leave of absence, and again carried his classes through the year. He reports that he has given, besides the second year work in course 2a, three advanced courses. These were a course in Heine and the Romantic school; a course in Middle High German, in which the lyric poetry of the period, particularly that of Walther von der Vogelweide, was studied; and a seminary course in which the history of poetic form was studied, and lectures were given on early Germanic verse and the influence upon German poetry of classical forms.

Professor Crane reports that the courses in the department of Romance languages have been given as offered without change or interruption. He notes a slight increase in the number of students taking advanced work in the department, and a corresponding slight decrease in the more elementary courses, pointing to better work in French in the preparatory schools. Professor Crane thinks the increasing number of advanced students in Romance language work will soon call for a clearer differentiation of the graduate courses in the department; and likewise for an increased number of graduate subventions, the Romance and Germanic languages having now only one fellowship and one scholarship between them. He urges that at least these be made two fellowships. One candidate for the master's, and three for the doctor's degree, have been preparing theses under Professor Crane's direction this past year.

Professors White and Crane both make strong pleas for more liberal initial salaries for the instructors in the modern languages. The qualifications upon which they have always insisted, including, besides graduation from a university, experience as a teacher of languages, graduate study, and residence abroad, demand of the instructors in these branches unusual maturity and length of preparation.

In the department of English, Professor Corson reports the carrying out of the full programme of courses in English literature laid out for the year. The number of students taking these courses was much greater, and the work done by them was better, than in any previous year. A very encouraging feature is the large amount of reading of classical English authors which Professor Corson has induced his students to undertake. Professor Hart reports an unusually large freshman class in rhetoric, and so much greater efficiency in the work done by this class as, in his opinion, amply to justify the action of the faculty in making English elective. The classes in philology not taken by Professor Hart himself have fallen off somewhat, owing probably to the transference of Professor O. F. Emerson's classes to a younger and less known man, a cause whose effect will not be lasting. English 4, however, the teachers' training class in English, has shown an increase in numbers. From the appointment of Frederick C. Prescott (see p. 15) to an assistant professorship with particular charge of argumentative composition, increased scope and efficiency of rhetorical instruction is anticipated. Assistant Professor Lee reports increased interest in all classes in elocution and oratory, and notes the second successive defeat of the University of Pennsylvania debaters in the annual contest with Cornell.

In the Sage School of Philosophy, Professor Seth reports a rather small attendance upon the elementary class in ethics, but a good attendance in the more advanced courses and a very high grade of work throughout. In the coming year, he will add to his present courses one throughout the year on the history of ethics, and an elementary course to be given in the spring term only. Professor Creighton reports two variations from the courses announced to be given in logic and metaphysics, the omission of the course on German philosophers since Hegel's death, which was to have been given by Dr. Irons, and the substitution by Dr. Albee of a course on the three Critiques of Kant for the brief survey of Leibniz, Hume, and Kant. Professor Creighton notes that the majority of those taking the advanced courses offered in his department are graduates, several classes being exclusively composed of graduate students. Professor Titchener reports that the psychological laboratory has been used more continuously, and by more students, than in any previous year. The results of seven psychological investigations carried on here, two of which were theses presented for the doctorate, have been published by students in the department during the past year. Dr. Pillsbury, assistant in psychology, having been called to take charge of the psychological department of the University of Michigan, his place has been filled by the appointment of Mr. I. M. Bentley. Professsor C. M. Tyler reports increased and striking interest shown by the classes in the history of religions. He reinforces the request of the professor of Semitics for maps of Egypt, Arabia, Assyria, and other oriental countries. Professor S. G. Williams reports a good attendance and systematic prosecution of the work in pedagogy.

In the President White School of History and Political Science, the work of Professor M. C. Tyler in American history has gone forward without breaks and in a satisfactory manner. The work in this branch will henceforth be enlarged and rendered more effective by the creation of an assistantship, to which Mr. C. H. Rammelkamp has been appointed. He will give his attention particularly to the history of New York State, a subject whose importance was touched upon in the last Report. At the same time, the examinership in American history being discontinued, there was added to the fellowship, a scholarship in American history. The publication of the two volumes of Professor M. C. Tyler's Literary History of the American Revolution should be noted as further marking the year. Professor Burr's absence in the prosecution of important historical researches for the American Venezuela Commission continued through the fall and winter terms. This necessitated the omission of his class in palæography and diplomatics. Professor Morse Stephens, in addition to the duties of his own chair, carried in this branch the classes in mediæval history and in Greek history during the fall term, and the latter in the winter also. Professor Burr, upon his return in the spring, covered as far as possible the two terms' work remaining in the class in mediæval history, carried on the class in Greek history, and held his historical seminary. As a result of the irregularity in this work, however, the classes in ancient and mediæval history have suffered in attendance during the past year. As to the work Professor Burr has performed during his absence, the editorial statement of the American Historical Review may be cited to the effect that: "never, in the history of diplomacy, probably, has a boundary dispute been illustrated by a more thorough, penetrating, ingenious and impartial investigation than that which Professor Burr has devoted to this problem" [i. e. of the boundary between Venezuela and British Guiana]. Professor Jenks, for the work in political science, in chronicling the giving of new courses on the financial and constitutional history of the State of New York (Assistant Professor Hull), the introduction to political science (Professor Jenks, Associate Professor Willcox, and Assistant Professor Hull) and other courses, announces for next year new courses on modern questions in international politics (Professor Jenks), anthropology and ethnology (Associate Professor Willcox), readings in economic German (Assistant Professor Hull), and history, statistics, and theory of international trade (Dr. Bullock). Professor Jenks lays especial stress on the study of concrete problems of social life as the distinguishing characteristic of the work in political science at Cornell, the aim being consistently the preparation of students for the duties of citizenship. Besides the usual magazine articles, addresses, etc., two books worthy especial notice have been published, Dr. Bullock's Introduction to the Study of Economics and Assistant Professor Hull's edition of the Economic Works of Sir William Petty, with introduction and notes.

In mathematics, Professor Wait reports a year of enthusiasm and progress. Mr. Paul Arnold, holder of the fellowship in mathematics, has spent the year in study in Berlin. The year has seen the establishment, by gift, of an annual scholarship entitled the Oliver Graduate Scholarship in Mathematics.

Professor Nichols, in reporting upon the tenth year during which he has had charge of the department of physics, gives interesting data on the growth of the work in this branch. In 1887, a class of seven men graduated in electrical engineering. In 1897, there were sixty-nine who received degrees in electrical engineering. In the same time the teaching force in physics grew from one professor, one assistant professor, and one instructor in 1887, to one professor, three assistant professors, and seven instructors and assistants in 1897. Professor Nichols announces the completion of a series of seven text-books written by members of the department staff, by which the work has been systematized and facilitated. These works were all written to meet the special needs of our students, but they have found wide use in other institutions. The Physical Review, which has just completed its fourth year, has established its place among scientific journals on both sides of the Atlantic, while original research, which it was purposed to foster, has so overwhelmed it with valuable matter for publication, that with the fifth volume it begins issue as a monthly magazine. An appropriation of $5,000 was made to secure a complete outfit of the machinery of polyphase transmission including accessories and installation. More money is needed for additions to the direct current electrical machinery.

Professor Caldwell reports a successful year in the department of chemistry. He considers, however, that there is urgent need of the establishment of the division devoted to applied chemistry which he has previously recommended. The organization and effectiveness of the department have been advanced by the appointment to full professorships of L. M. Dennis, hitherto associate professor of analytical chemistry, and J. E. Trevor, hitherto assistant professor of general chemistry and physical chemistry.

Professor Atkinson reports that a thorough and systematic reorganization of the courses in botany has been most successfully carried out, and that it has been accompanied by an increased attendance, particularly in the laboratory. He urges an increase in the instructing force to provide more fully for work in plant physiology and in forestry, and a liberal expenditure for the building up of the botanical museum by the purchase of valuable collections. He further states that the present large attendance in this department is seriously overcrowding the limited laboratory space, and that, to provide adequate laboratories, museum space, etc., a separate building designed especially for botanical purposes will soon be a necessity. A botanic garden on an extensive scale (600–800 acres) is another pressing requirement, and in order to obtain a tract in which the vegetation may be perpetuated and studied in its natural state, it is advisable to provide for this need at the earliest possible moment.

In the department of entomology and general invertebrate zoology, the year, though marked by no extensive departure from previous years, has been a most successful one. The year has seen the publication of Professor Comstock's Insect Life, which is intended to facilitate the introduction of nature study into the secondary schools; the publication of further valuable investigations in economic entomology by Mr. Slingerland; and the steady progress of Mr. MacGillivray in his work on the entomological collections, signalized by the discovery and description of a large number of new species of Tenthredinidae.

Professor Wilder reports good attendance upon the classes in physiology and vertebrate zoology ; a number of investigations which have added to scientific knowledge ; additions to the museum, considerable not in numbers but in value ; an enlargement, identification, and rearrangement of the local collections ; and a growth of interest and enthusiasm in general natural history work. Professor Wilder's share in matters of general educational importance, through lectures, papers, and addresses before various bodies, has been large, as usual. He has during the year, in particular, given impetus to a movement for the practical study of the brain early in the public school course.

Assistant Professor Hopkins, in submitting the first report of the department of anatomy, says that the organization of the new department, the fitting up of the laboratory and preparing of the new courses have during the past year left little time for research work. He urges the appointment of an assistant, since the number of students is large, the laboratory must be kept open nearly all the time, and constant supervision and direction is necessary to make laboratory study effective.

Professor Gage reports that the attendance in the classes and laboratories of the department of microscopy, histology, and embryology was so great that even the admirable facilities now available in the work were put to a strain, and the work of instruction became arduous ; this was lightened however by the presence of great enthusiasm on the part of the students, so that work went forward most successfully. A seminary course has been a valuable innovation, and important research work has been done during the year.

In the department of geology, Professor Tarr notes a large and steady increase in the size of the classes in dynamic geology and physical geography. A new course has been offered on methods in teaching geography. This will be a standard feature of the work hereafter. Field-study in these branches is steadily enlarging, and during the past year Professor Tarr has taken classes as far as the Niagara Falls gorge, and Wilkes Barre, Pennsylvania. Professor Tarr's trip to Labrador, Baffin's land, and Northern Greenland, accompanied by Assistant Professor Gill and several students, has been directly productive of good results. Professor Tarr's Elementary Physical Geography, published last year, reached its fifth edition in fifteen months, and during this first year of its publication was used by 10,000 school pupils. He has now published an Elementary Geology for school use. Assistant Professor Gill reports that the work in mineralogy and petrography has been facilitated by improvements in apparatus, by the introduction of water and gas into the upper laboratory, and by the addition to the collections of about 200 arctic rock-specimens. In palæontology, Assistant Professor Harris reports that as the result of last summer's collecting expedition in Alabama, Georgia, and Virginia, from one to four students have been steadily occupied helping the professor arrange and classify the new material. The large collection of brachiopods already in the museum has been arranged and classified, and the task of cataloguing the the Newcomb collection, embracing more than 10,000 species and 40,000 specimens, has at last been brought to a close. Assistant Professor Harris considers the collection, examination, identification, and cataloguing of palæontological material the best training for a palæontologist. Class instruction has, however, not been neglected. The palæontological equipment has been sensibly improved by the acquisition of new apparatus. Professor Tarr and Assistant Professor Gill strongly present the need of a new building devoted to geology; and for the perfection of the equipment and carrying out of the work in all branches of geology large sums of money are still needed.

In physical culture, Professor Hitchcock reports that class work has gone forward as usual. In addition, he has been making a statistical study of the results of fatigue which promises interesting results. Professor Schuyler, for the department of military science, notes excellent work in the course in military science, and, in military drill, regular attendance and good progress. A change in the drill hour from 4:45 to 2 p. m., which has just been effected, is expected to improve the quality of the work.

One hundred and fifty-eight of the women students have during the past year lived in Sage College, and at no time less than 147. Sage College has grown in popularity since the repeal of the old rule making residence obligatory. Increased gymnasium facilities, the providing of fire escapes and ample fire alarms, and other improvements, have at the same time joined in making life there more attractive than residence elsewhere in Ithaca. The accommodations, indeed, even with the increased number of rooms afforded by the new wing, have not met the demand during 1896–97. With a view to providing more adequately for the accommodation of women students, the University has purchased and refitted the spacious residence of the late Professor Prentiss, in which there will be accommodations for 42 students who, however, will take their meals in the Sage dining hall. The house, which was purchased from the Sage College funds, has been designated the Sage College Cottage, and in administration and management it is, though not quite contiguous with the main building, to be treated as an integral part thereof. This Cottage and the annex, erected in 1895, almost double the lodging capacity of Sage College. Along with the enlargement of the establishment on its material side, the Board has given added dignity to the office of the head by abolishing the former title (which was associated with fitting schools) and adopting that of "Warden," which is the honored title of the head of the oldest college for men in the English-speaking world—Merton College at Oxford. While giving, if possible, renewed emphasis to the social side of the office, the Board also expect the incumbent to possess the same scholastic and intellectual attainments as are demanded of members of the faculties; and to this end it has been provided that the Warden of Sage may become a member of the instructing staff of the University. Apart from the appointment three years ago of Miss Canfield to take charge of the work in the Sage gymnasium, this is the first recognition at Cornell University of women's right to teach as well as to learn. The new Warden, who succeeded Mrs. Hooker on the expiration of her appointment in June, is Miss Louise Sheffield Brownell, Ph.D. Miss Brownell graduated some years ago at Bryn Mawr, from which she also received an appointment to a traveling fellowship. She studied two years abroad, in Germany and in England, spending the larger part of the time at Oxford. On her return she continued her studies for two years more, at Columbia and Bryn Mawr, from the latter of which she received the Ph.D. degree. Miss Brownell has made a specialty of Greek and English literature, and, with the cordial approval of Professor Corson, she is to offer courses in his department (her courses being open to all properly qualified students of the University). Though teaching is a subordinate part of Miss Brownell's work at Cornell, it has been recognized in her official title, which is that of Warden of Sage College and Lecturer on English Literature. It is, however, in her capacity of Warden that Miss Brownell's duties chiefly lie.

THE COLLEGE OF LAW

The total number of students coming under the instruction of the Faculty of Law was 305. Of these 249 were regularly enrolled in the College of Law, while 56 were students in general and technical courses who elected a portion of their work in law. This attendance is considerably the largest ever registered, exceeding that of 1895–96 by 56 or, if we limit the comparison to law students proper, by 48. For comparison with other years and other courses see pp. 16–17 ; and for the age and geographical distribution of students at entrance, etc, see the Registrar's report. (Appendix x, pp. L, LIII, and LIV). Besides the constant forces which have attracted students of the law to Cornell, the most important of which are the strength of the faculty and the richness of the library, the attendance in 1896–97 received an extraordinary stimulus from the fact that it was the last year of the two years' course, and the last but one of the low entrance requirements. It may, therefore, be predicted that the attendance in 1897–98 will be smaller, and still smaller that of 1898–99, when candidates for admission will be required to pass the matriculative examination of the Academic Department. The following years will doubtless bring about a recovery. But whatever the results in numbers may be, there can be no doubt of the wisdom of the legislation which raises the standard of admission and extends the subsequent period of study. Nothing less would nowadays satisfy either the dignity of the profession or the scholastic ideals of the University.

For a considerable portion of the year, Professor William A. Finch was incapacitated by illness from the discharge of his duties, both as professor and as secretary. His course in real estate was taken in part by Judge Finch and in part by Mr. Jared T. Newman, whose services were greatly appreciated by both faculty and students; and Professor Huffcut obligingly added to his other duties the conduct of the secretary's office. Although Professor William A. Finch is now happily restored to health, Mr. Newman has been appointed lecturer on practice and procedure for the year 1897–98, thus supplying a phase of instruction for which no adequate provision has hitherto been made.

Additional shelving has been provided for the library, and a rearrangement of books in the lower room, with the result of making them more accessible, has been carried through. Valuable volumes of statutes have been received as gifts from the governments of Bermuda, West Australia, New South Wales, and Jamaica; and donations from other sources have been not infrequent. Ex-president White has added to his gifts of portraits of distinguished jurists the portrait of John Marshall. What would now be of greatest aid to the College of Law is a gift for the permanent maintenance of the library. The bulk of reported adjudications is constantly on the increase; and a good library needs them all.

For further information concerning the College of Law see the report of Judge Finch. (Appendix IV, pp. XXV–XXVII).

THE COLLEGE OF AGRICULTURE

The total number of students enrolled in the College of Agriculture was 115, of whom, however, 60 were in the short winter course. For comparison with other years and other courses see pp. 16-17; and for age and geographical distribution of students at entrance, etc., see the Registrar's report. (Appendix X, pp. L, LIII, LIV). The increase in the number of students making a specialty of horticulture was commented on in last year's Report; and Professor Bailey has had this year a larger number than ever. The advanced entrance requirements go into effect in 1898. In conformity with the policy of making technical degrees specific, outlined in last year's Report (p. 52), the first degree has been changed from B.S. to B.S.A. (Bachelor of the Science of Agriculture). Professor Wing received leave of absence for two terms, to study the dairy husbandry of the leading countries of Europe. The university extension work which the College of Agriculture has undertaken in the State of New York has now assumed very large proportions. The legislative appropriation of 1896 was $16,000, and it contemplated work in the Fourth Judicial Department only ; but in 1897 the appropriation was raised to $25,000, and the field was enlarged to the entire State. Formerly this State work was prevailingly in the line of experiments; but experience has induced the college to lay stress on lectures and the dissemination of leaflets on nature studies. Many thousands of farmers, teachers, and pupils are now enrolled in the extension department. On the whole, it seems the most promising agency yet discovered for aiding directly the farmers of the State by means of scientific knowledge.

In the experiment station division, the State appropriations have reinforced the federal appropriation, greatly to the advantage of the work in hand. During the year eighteen bulletins were issued, which contained 486 pages and 210 illustrations. The increasing demand for these publications shows their utility to the farmers of the State.

The College of Agriculture still needs a home, of which the beautiful dairy building should be only a single wing. The successive encroachments of the campus on the farm have left insufficient land for the experimental and illustrative work of the college, and another farm should be purchased at the earliest possible date.

For further information concerning the College of Agriculture see the report of the director. (Appendix V, pp. XXVIII-XXXI).

THE NEW YORK STATE VETERINARY COLLEGE

This college was opened at the beginning of the academic year 1896–97 with a faculty of remarkable strength, as described in last year's Report. As in the preceding year, the item of $25,000 for maintenance was included in the appropriation bill, which provides for the support of the State government and State institutions. The organization of the institution was completed by the passage of an act providing for its administration, which was approved by the governor May 22, 1897.- The terms of this important act are as follows:

CHAP. 689

AN ACT to provide for the administration of the State Veterinary College, established by chapter one hundred and fifty-three of the laws of eighteen hundred and ninety-four.

Became a law May 22, 1897, with the approval of the Governor. Passed, three-fifths being present.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

SECTION 1. The State Veterinary College, established by chapter one hundred and fifty-three of the laws of eighteen hundred and ninety-four, shall be known as the New York State Veterinary College. The object of said veterinary college shall be: To conduct investigations as the nature, prevention and cure of all diseases of animals, including such as are communicable to man and such as cause epizootics among live stock; to investigate the economical questions which will contribute to the more profitable breeding, rearing and utilization of animals; to produce reliable standard preparations of toxins, antitoxins and other products to be used in the diagnosis, prevention and cure of diseases and in the conducting of sanitary work by approved modern methods; and to give instruction in the normal structure and function of the animal body, in the pathology, prevention and treatment of animal diseases, and in all matters pertaining to sanitary science as applied to live stock and correlatively to the human family. All buildings, furniture, apparatus and other property heretofore or hereafter erected or furnished by the state for such veterinary college shall be and remain the property of the state. The Cornell University shall have the custody and control of said property, and shall, with whatever state moneys may be received for the purpose, administer the said veterinary college, with authority to appoint investigators, teachers and other officers, to lay out lines of investigation, to prescribe the requirements for admission and the course of study and with such other power and authority as may be necessary and proper for the due administration of such veterinary college. Said university shall receive no income, profit or compensation therefor, but all moneys received from state appropriations for the said veterinary college or derived from other sources in the course of the administration thereof, shall be kept by said university in a separate fund from the moneys of the university, and shall be used exclusively for said New York State Veterinary College. Such moneys as may be appropriated to be paid to the Cornell University by the state in any year, to be expended by said university in the administration of said veterinary college, shall be payable to the treasurer of Cornell University in three equal payments to be made on the first day of October, the first day of January, and the first day of April in such year, and within thirty days after the expiration of the period for which each installment is received the said university shall furnish the comptroller of the of state of New York satisfactory vouchers for the expenditure of such installment. The said university shall expend such moneys and use such property of the state in administering said veterinary college, and shall report to the governor during the month of January in each year, a detailed statement of such expenditures and of the general operations of the said veterinary college. No tuition fee shall be required of a student pursuing the regular veterinary course, who, for a year or more immediately preceding his admission to said veterinary college shall have been a resident of this state. The tuition fees charged to other students and all other fees and charges in said veterinary college shall be fixed by Cornell University, and the moneys so received shall be expended for the current expenses of the said veterinary college.

§ 2. This act shall take effect immediately.

The entrance examinations to the college presuppose a full course of four years at a high school or preparatory academy. As these demands are much higher than the veterinary profession has hitherto made, it is not to be expected that the number of students will at first be large. In 1896–97, there were enrolled in the college eleven students taking the full course and fifty-three taking the short winter course, besides a considerable number of University students taking bacteriology, anatomy, or other special branches. The director's report shows that, in spite of the drawbacks incident to an opening year, the work in all departments was admirably done.

It will be seen from the administration act that research into animal diseases is a not less important function of the Veterinary College than the teaching of students. In this respect the college stands in the same relation to the animal possessions of New York as the Agricultural Experiment Station stands to the farms, gardens, and orchards. The professors have entered zealously into the work of original investigation and experiment.

The equipment in comparative pathology and bacteriology is more complete than in any other department; and Professor Moore's experiments and investigations have awakened great interest both at home and throughout the State. Fruitful results have already been attained concerning contagious pneumonia in horses, contagious abortion in cows, swine plague, hog cholera, etc. In this connection, mention must be made of the important services which the college has rendered the State in dealing with outbreaks among the flocks and herds. Professor Moore, at the request of the Commissioner of Agriculture, visits the localities where diseases appear, makes an examination on the spot, and subsequently demonstrates the nature of the malady by a study of its products in the bacteriological laboratory. It is impossible to overestimate the value to the State of having in the faculty of the Veterinary College scientific experts for the performance of these delicate and important functions.

For further information regarding the New York State Veterinary College see the director's report. (Appendix VI, pp. XXXI–XXXV).

THE COLLEGE OF ARCHITECTURE

The number of students enrolled in the College of Architecture was 51. The work of the year was very efficiently performed. Of the retirement of Professor Babcock mention has already been made (p. 9). Associate Professor Osborne is to be absent on sabbatic leave in 1897–98. Unusual responsibilities will, therefore, devolve upon the new faculty; and in order that the public may understand what changes are proposed, it has seemed advisable to print as the annual report from this college a statement of the aims of the faculty, the programme they have adopted, and the means which they deem desirable or indispensable for the attainment of these objects. Such a communication has been prepared by Professor Trowbridge, the professor in charge of the college (see p. 14, and Appendix VII, pp. XXXVI–XXXVIII).

The most striking feature in the policy of the faculty is the great accentuation of the work in architectural design, which becomes the central subject of the course. This work is in charge of Assistant Professor Van Pelt, whose qualifications have been elsewhere described (p. 14); and it has been arranged that every member of the faculty, including the professor in charge, is to aid Assistant Professor Van Pelt in special phases of design. An invaluable inspiration to every member of the college will be found in the drawings in architectural design, the architectural sketches, and the decorative designs which the Trustees authorized Assistant Professor Van Pelt to purchase in Paris as specimens of the best French workmanship. The work in freehand drawing for which Instructor Brauner was secured last year has been greatly extended, and the further advantage has been obtained for the sophomores that their drawing shall henceforth be done in the museum of casts,—"an environment full of inspiration and help," as Professor Trowbridge truly says.

The college needs an additional teacher who, if a suitable candidate can be found, should take charge of the history of architecture. Another desideratum is an endowment for a traveling fellowship, which, as the architect's materials are nearly all in the Old World, may be described as a really urgent and imperative need for the encouragement and stimulus of our most advanced students.

THE COLLEGE OF CIVIL ENGINEERING

The number of students enrolled in the College of Civil Engineering was 150. For comparison with other years and other courses see pp. 16–17; and for age and geographical distribution of students at entrance, etc., see the Registrar's report. (Appendix X, pp. L, LIII, LIV).

The attendance in this college showed a considerable increase in 1896–97, which may also be expected for 1897–98, the last year of the present low entrance requirements. The advance in the entrance standards, which goes into effect in 1898, will doubtless lead to a diminution of numbers; but the preparation, and perhaps even the capacity of those who are admitted will be of a higher quality.

The great hydraulic laboratory described in last year's Report is not yet completed, and it is doubtful if it will be ready for use before the opening of the University in 1898. Meantime the conception of it, and the plan as well, have been briefly commended by distinguished engineers both at home and abroad. The programme of work contemplated by the director, when he is put in possession, will be found anticipatorily described in his report.

The University gives the State the free use of rooms in Lincoln Hall for the State Meteorological Bureau, and the services gratuitously rendered to the Bureau by the director of the College of Civil Engineering make heavy demands upon his time. The sacrifice is borne, however, partly for the sake of the incidental advantage to the University (in the matter of data for the study of climate, water supply, etc.) but mainly for the sake of the larger interests of the commonwealth. If the legislature at any time deemed it wise to abolish the Bureau, it would be no injury to Cornell University, though many of its members would realize that the policy was shortsighted and unwise from the point of view of public interest.

For further information regarding the College of Civil Engineering see the director's report. (Appendix VIII, pp. XXXVIII–XLIII).

THE SIBLEY COLLEGE OF MECHANICAL ENGINEERING AND MECHANIC ARTS

The total number of students enrolled in the undergraduate courses of Sibley College was 473, of whom 30 were college graduates. In the Graduate Department there were 18 students in mechanical engineering and electrical engineering. For comparison with other years and courses, see pp. 16–17, and for geographical distribution of freshmen, age at entrance, etc., see the Registrar's report. (Appendix IX, pp. L, LIII, LIV).

The attendance has not yet recovered from the effects of the advanced entrance requirements which went into operation in 1894. The graduating class of 1897, which was the largest in the history of Sibley College, was the last which entered before the institution of the present high standards for matriculation. The classes of 1898, 1899, etc., will, if smaller at graduation, rank in scholastic attainments with former graduates of a year's standing. This great advance in the character and extent of the work now done in Sibley College is the most marked characteristic of its recent history. One of its results is that graduates of other institutions who were formerly admitted into the Graduate Department are remitted to the senior class, and those graduates of other institutions who formerly became seniors are now required to register as juniors. Notwithstanding the reduction in attendance consequent upon the raising of the standard for admission, the graduating class will in numbers far exceed those of any other engineering school.

The graduates of Sibley College go mostly to industrial establishments, where scope is found for the practical utilization of their scientific attainments. But large numbers are engaged in journal service and in teaching. And Director Thurston reports that they may be found "teaching in any state in the Union." The revival of trade and industry is likely to increase the demand of the business world for them.

The practical side of technical education has always been emphasized in Sibley College. Through purchase and gift the institution is now in possession of a large and valuable equipment, but it needs constant additions and renewals; the public, it is hoped, will enable the Board to keep it abreast of modern demands. In addition to work in the shops and laboratories of Sibley College, the more advanced students are permitted and encouraged to conduct investigations outside of the college, and admirable facilities have been offered, not only in the belt of cities encompassing Ithaca—Rochester, Elmira, etc.—but even in places as distant as Washington and Boston. This scientific and technical research in professional fields outside has afforded valuable training to the students, while relieving the pressure upon the Sibley laboratories, and supplementing the function they discharge.

The original investigations of the Sibley staff, so far as published during the past year, are mentioned in Appendix XIII. Director Thurston also calls special attention to the experimental studies of Professors Durand, Carpenter, Ryan, and Barr. (Appendix IX, p. XLVII). The whole makes a very impressive and significant exhibit.

The teaching and research work of Sibley College should strongly commend it to the support of public-spirited citizens.

The foundations were laid broad and deep; a structure has been reared of commanding proportions; but extensions and improvements are now loudly called for by the progress of mechanical engineering itself. There is truth and soberness in the mingled dissatisfaction and enthusiasm of the director's words: "Our needs are still great and numerous, and our opportunities for extending and broadening and advancing our work are without parallel, here or elsewhere." For a specification of those needs see the director's report. (Appendix IX, pp. XLIII–XLVIII, especially p. XLVIII).

THE LIBRARY

The report of the librarian (see Appendix XI) shows that during the year ending July 31, 1897, there were added to the general library 10,005 volumes, of which approximately 28 per cent came as gifts, the remainder, or rather more than 72 per cent, being purchased from the income of the Sage endowment fund. The present extent of the library is nearly 200,000 volumes and over 33,000 pamphlets. The great value of the Sage endowment, as providing for continuous growth in size and effectiveness of this vital centre of the University cannot be overestimated. The purchases made from the income of this fund are too numerous for description, constantly including as they do, every division of the immense educational field covered by the University. Deserving a special mention, however, are a collection of 2,000 dissertations on the works of the Greek and Roman philosophers, and sets of annals, periodicals, etc., dealing with archæological, literary, scientific, and other matters.

The gifts received during the year aggregated 2,776 volumes. The largest giver, as was the case in 1895–96 has been Mr. Willard Fiske, who has added more than 900 volumes to the Dante collection, which now numbers 6,031 volumes. His Highness the Maharajah of Jeypore has presented the library with a set of the valuable Jeypore portfolios of architectural details. Hon. Andrew D. White, Mr. Botterel, of Ottawa, Mr. F. E. Tibbetts, '72, Mr. Theodore Stanton, '76, Mr. M. E. Poole, '80, and Professors Burr, Caldwell, Crane, and Hart are among the individual givers of the year, while the Lords Commissioners of Her Majesty's Treasury, the U. S. Coast and Geodetic Survey, the national and state governments, the British and Canadian Patent Offices, have given us many valuable official reports, charts, etc.

Excellent progress in the cataloguing of special collections has been made. The first portion of the Dante catalogue, consisting of the list of editions of the Divina Commedia, is now in type. The printing of that portion of the catalogue of the White Library containing the finding list of the miscellaneous division has been completed, and work has been begun on the final portion, which will catalogue the works dealing with the history of superstition and persecution. The binding and cataloguing of the pamphlets of the Zarncke collection has been completed during the year.

A noticeable feature of the year is the increase in the number of advanced students to whom permission was given to consult books in the stacks. It is unfortunate that this privilege is attended with the practical drawback that so many books are misplaced, on the average, two volumes to each press during the year. The department collections have also suffered from loss—55 volumes being missing on July 31st out of 6,483 deposited in the different buildings.

Among minor improvements, mention may be made of the new card-cases, which while occupying the same floor spaces as the old, double their capacity and provide for 556,000 cards. A map room with cases of wide shallow drawers for the reception of the growing collection of mounted maps has been procured by partitioning off with a glass screen the inner end of the large room used by the political science seminary.

For further information in regard to the library see the librarian's report. (Appendix XI, pp. LVIII–LXI).

SAGE CHAPEL AND BARNES HALL

In Sage Chapel the University continued to provide Sunday morning services during all three terms of 1896–97, experience having shown this to be the most satisfactory system. The wide territory which the Dean Sage preachership endowment allows the University to draw its preachers from, and the entire impartiality of the selection may be seen from the list of those who occupied the University pulpit during the past year. In two instances the expected preacher was detained, and the pulpit was occupied by a member of the faculty. In the remaining twenty-eight Sundays there preached in Sage Chapel three Episcopalians, four Methodists, four Congregationalists, five Unitarians, five Baptists, five Presbyterians, one Reformed Episcopalian, and one Swedenborgian. Of these gentlemen, fourteen were from churches in this State, seven of them from New York City, four from Brooklyn, two from Buffalo, and one from Nyack; and thirteen from other states, of whom three each came from Massachusetts and Pennsylvania, two each from Illinois and Connecticut, and one each from Rhode Island, California, and Michigan. The twenty-eighth came from the city of Washington. In all cases the most representative preachers of the various denominations are selected. The privilege of listening for four years to such a succession of the greatest religious teachers of the age is one of the most valuable advantages enjoyed by students in Cornell.

Unfortunately, the seating capacity of Sage Chapel proves yearly more inadequate. It was erected in 1873–74 to provide opportunities of religious instruction for a university of five hundred students. It cannot, therefore, be a matter of surprise that it fails to provide entirely for the needs of the present University body of approximately two thousand students. Again and again during the past year the President was appealed to by the students to transfer the services temporarily to the larger auditorium of the Armory. Twice this extraordinary expedient was actually resorted to, and in each case the number of students attending the services was three times the largest figure possible to Sage Chapel. It is much to be desired that the Chapel may soon be enlarged to provide more fully for the needs of a student body which has grown nearly fourfold since its erection.

The students banded together in the Cornell University Christian Association most effectively supplement the services held in Sage Chapel. Two objects are kept steadily in view by them, the betterment of the religious and social life of all the students, and the special training of the few who are expected to become religious leaders. For the benefit of all, nine large and earnest Bible classes were conducted in 1896–97, a series of class prayer meetings was held throughout the year, and a course of Sunday lectures on religious topics was provided. Those intending to devote all or much of their lives to church work regularly conducted Sunday services in several localities in the neighborhood of Ithaca, and studied together the history and methods of mission work. By class receptions and similar means Barnes Hall was as usual made a unifying factor in the life of the students. It is a matter for congratulation that the Cornell University Christian Association increased its student membership nearly 30 per cent during the year, and that it enjoyed a year of financial prosperity, during which a considerable reduction was made in the deficit handed down from former years.

THE UNIVERSITY GROUNDS

Extensive changes have been made during the year in the Fall Creek gorge. The great hydraulic laboratory and canal described in the last Report (pp. 57–58) are not yet completed, though the latter approaches completion. In connection with these improvements in the equipment of the College of Civil Engineering, it has been deemed advisable, after careful study and expert advice, to make new and enlarged provisions for the water and power supply of the University. A new dam, fifteen feet below the old Beebe or Triphammer falls dam, and ten feet higher, has been constructed in the course of the summer; and between that point and Forest Home an artificial lake containing 53,000,000 gallons of water will soon fill the valley whose bottom was till recently covered with a tangled growth of trees and brush or carpeted with violets.

The arched dam just completed above the falls spans the gorge at a point where nature has done much to assist in the work. A natural shoulder of rock projects from the north bank half way across the valley at the site of the old Beebe dam and rises, with level upper surface, to a height ten feet above the wide bay locked between the sides of the valley and the narrow gorge at Forest Home. This level has been continued across to the south bank by the new concrete dam, and an artificial lake has thus been formed which will afford storage of water for power purposes, extend the facilities of the new hydraulic laboratory, improve the campus water supply, and, it is hoped, materially add to the beauty of the University property in this neighborhood. The dam is thirty feet high at the deepest section, and is anchored securely into the bed rock of the stream and the ledge to the north. At the south end it merges into the partition wall turning eastward to the head gates of the laboratory canal and protecting its lower level from the waters of the lake. The finished dam and gate house, which are built of concrete, practically form a monolith. It is homogeneous throughout, the same care and quality of materials being used in the interior of the structure as on its outer faces. Its curved form gives added strength and beauty. On the downstream face the dam has been finished in a series of steps, designed to break the force of the water during heavy floods and so prevent undermining of the foundations. As an additional measure of safety, the narrow space between the former Beebe dam, which is left standing, and the new structure is to be rammed with puddled clay.

The rocky promontory north of the dam has been stripped of trees and soil down to the rock ledge and leveled one foot below the upper surface of the dam. This area will form the spillway, and, during the major portion of the year, will carry the natural flow of the stream in a thin wide-spreading sheet covering its entire area and discharging into the narrow defile below the dam and above the fall. The slope on the north end of the spillway is being paved to protect the banks from floods which may rise to depths exceeding four feet over this area and three feet over the crest of the dam.

The lake formed above the dam will cover an area of twenty-three acres, submerging the islands under eight feet of water, and rising six feet above the present level at the base of the fall near Forest Home. Its storage of 53,000,000 gallons, available for increasing the stream flow for power and laboratory purposes in seasons of drought, may be further increased by adding flash-boards over the dam and spillway. Provision for this purpose is being made in the construction.

In clearing the surface of the reservoir to prepare for flooding it has not been thought best to adopt the extreme policy of removing the surface soil, as practiced by the Metropolitan Water Board, in preparing similar reservoirs for the Boston water works. A large portion of the area to be covered is formed of gravel and detritus brought down by the stream from its upper reaches. This will form an admirable bottom for the new reservoir. The areas covered with vegetable mould are not in a condition to affect seriously the quality of the water after the entire basin has been burned over and cleared of all perishable matter. This treatment of the bottom accords with the practice of the New York engineers in preparing storage reservoirs on the Croton watershed. It is believed that the removal of the decaying stumps and vegetation in the basin, together with the increased area and volume of the reservoir, will cause a decided improvement in the quality of the water delivered on the campus.

A 48-inch riveted steel conduit leads from the gate house at the dam and will supply water to the turbines and power plant below. The details of the experimental canal, the 72-inch steel standpipe for laboratory uses, and the laboratory building under the cliff, below Triphammer falls, were referred to at some length in the Report for 1895-96. These constructions are now rapidly approaching completion and it is expected that the lake may be filled in December. The natural beauty of the gorge in the vicinity of Triphammer falls is to be restored so far as possible at the completion of the work—the new structures being designed to harmonize with their surroundings.

These improvements include, besides the dam, laboratory, canal, and pumping and power houses, a new system of sewers and water mains for the campus. The outlay for the completed works will naturally be very heavy. But it is for a permanent improvement, and one greatly needed, as the present facilities for supplying water, power, and electric light to the University have become with the growth of the institution altogether inadequate. Fortunately the expenses have been reduced, and at the same time the highest excellence known to engineering science secured, both in design and workmanship, by the generous devotion of an Alumni Trustee, Mr. Frank S. Washburn, C.E., who at no small sacrifice of time and energy made the plans for all constructions and supervised, and continues to supervise, their execution.

The Trustees having authorized the extension of the electric railway from President's Avenue along East Avenue and across the Fall Creek gorge to the private property on the other side, a steel arch bridge, whose plan they have approved, is now in course of construction across the Fall Creek gorge, at a point about half way between the Triphammer falls and Sibley College. The bridge is of the form known as the girder arch—the lower chord being formed of a five foot plate girder. Latticed posts rise to support a roadway twenty-four feet in width flanked by two five foot walks. The roadway descends to the north, on a grade of three and one half feet to the hundred. The span between supports will be 170 feet, and the rise 34 feet. The excavation for the abutments has been completed, the masonry is in place, and the construction of the false work has been begun. It is expected that the bridge will be in place by December first. Its lines are graceful, and in accord with the natural beauty of the environment.

In authorizing all these changes in the Fall Creek gorge, at a point, too, where the scenery is especially varied and romantic, the Trustees have shown great solicitude to preserve the unequalled beauty of the campus; and though the structures described cannot but make a difference, it is hoped and believed that the studied art of man will so blend with the careless and prodigal grace and charm of nature that old students returning to visit Alma Mater may not be conscious of any serious æsthetic sacrifice, while they will probably regard the artificial lake as an enhancement of the scenic beauty. At any rate, in meeting the inexorable demands of the material utilities of the University the Board are jealously tender of those noble beauties with which nature has so liberally endowed the institution.

The beautifying of the campus has been pushed forward energetically by Professor Rowlee, who has been officially appointed superintendent of the ornamentation of grounds. His work has embraced the grading, laying out, and planting of the grounds about the New York State Veterinary College, of the park lying east of Cascadilla Place and south of Cascadilla gorge, and, lastly, of the grounds about the new entrance gates, to the west of Cascadilla Place. It was necessary in some cases to transplant quite large trees into soil not at all fit for them. But, aided by a favorable season, all has gone fortunately. The water garden before the main entrance to the State Veterinary College and the striking new beds of flowers about Cascadilla Place, Boardman Hall, and the Library have been favorably noticed both by residents and visitors. Two hundred vines have been set out around the various university buildings, and all seem to promise good results.

Nearly $2,500 has been spent in connection with the ornamentation of the grounds during the year. A separate building has been erected for the work of the superintendent. Two acres are kept planted in nursery stock. By exchanging a quantity of native species from this stock, a number of valuable young ornamental shrubs and trees, cedars, rhododendrons, bamboos, etc., were obtained in the spring from the Biltmore nurseries, in North Carolina. It is confidently expected that the campus will year by year manifest the results of the intelligent and, it may be said, affectionate care which it is now receiving.

THE FINANCIAL SITUATION

The gift of Mr. William H. Sage, mentioned in the last Report, for the stone bridge and other improvements about the Cascadilla entrance has been increased to $14,000. General Stewart L. Woodford has also presented $1,000 as an additional endowment for the Woodford medal fund. The executors of the Fayerweather estate, after the recent decision of the Court of Appeals, paid over $80,000 on account of the residuary legacy. Ex-governor Flower has presented $5,000 to the University for the purchase of a library for the State Veterinary College, for which, on account of lack of funds, no provision had hitherto been made; and the gift derives special significance from the fact that the State Veterinary College was established at Cornell University under an act which was approved by Mr. Flower as governor of the State. The legislature inserted in the appropriation bill, which makes provision for the support of state institutions, an item of $25,000 for the maintenance of the State Veterinary College, and under the so called Nixon bill, an appropriation of $25,000 was made for university extension work in agriculture, in conformity with the suggestion of last year's Report (p. 55).

The Treasurer's report shows that the available income for the year was $588,978.48. This includes, however, the surplus income from 1895–96 of $40,073.95, which had been reserved for contemplated improvements, and also an extraordinary addition of $39,531.98, consisting of $28,688.16, being premiums on securities sold, and $10,843.82, being back interest received from the executors of the Fayerweather estate. Only about one fifth of the entire income was received from tuition fees, namely, $120,634.16. The average *nominal* rate of interest on investments was 5.864 per cent, and the average *real* rate 5.35 per cent; the corresponding figures for 1895–96 being 5.877 per cent and 5.583 per cent; and in 1894–95, 6 per cent and 5.3 per cent.

The Trustees are referred for further details concerning the several departments of the University to the Appendices, which, in number and in fulness and variety of information, exceed anything hitherto published in connection with the President's Report, to which they form an indispensable supplement.

J. G. SCHURMAN

President

APPENDIX I

APPOINTMENTS AND REAPPOINTMENTS

The following appointments were made to the corps of instruction to take effect, unless otherwise stated, at the date of appointment:

E. D. Magee, Assistant in Library of the College of Law, September 22, 1896.
D H. Wells, Assistant in Library of the College of Law, September 22, 1896.
Albert H. Walker, Lecturer in the College of Law, September 29, 1896.
C. E. Cornell, Clerk of State Veterinary College, October 6, 1896.
J. VanWagenen, Jr., Assistant in Butter Making, for the winter term, October 13, 1896.
W. E. Howe, Demonstrator of Anatomy in the State Veterinary College, October 13, 1896.
H. R. Ryder, Demonstrator of Anatomy in the State Veterinary College, October 13, 1896.
W. W. Hall, Assistant in Cheese Making, for the winter term, January 5, 1897.
C. W. Sims, Assistant in Agriculture, for the winter term, January 12, 1897.
E. Walker, Assistant in Horticulture, for the winter term, January 12, 1897.
G. A. Smith, Assistant in Chemistry, for the remainder of the current year, January 26, 1897.
L. Anderson, Assistant in the Dairy Department, College of Agriculture, March 23, 1897.
E. D. Wright, Instructor in Greek, for the spring term, April 6, 1897.

The following appointments have been made to the corps of instruction, to take effect, unless otherwise stated, at the beginning of the year 1897–98:

C. Babcock, Professor of Architecture, *Emeritus*, March 10, 1897.
G. P. Bristol, Professor of Greek (to take effect August 1, 1898), March 10, 1897.
W. F. Willcox, Professor of Social Science and Statistics (to take effect August 1, 1898), March 10, 1897.
L. M. Dennis, Professor of Analytical Chemistry (to take effect August 1, 1900), March 10, 1897.

H. S. Jacoby, Professor of Civil Engineering, in charge of Bridge Engineering and Graphics (to take effect August 1, 1900), March 10, 1897.
J. H. Barr, Professor of Mechanical Engineering (to take effect August 1, 1900), March 10, 1897.
J. E. Trevor, Professor of General Chemistry and Physical Chemistry (to take effect August 1, 1900), March 10, 1897.
A. B. Trowbridge, Professor of Architecture, in charge of the College of Architecture, June 16, 1897.
J. V. VanPelt, Assistant Professor of Planning and Design in the College of Architecture, April 27, 1897.
F. C. Prescott, Assistant Professor of Rhetoric, May 18, 1897.
B. S. Cushman, Instructor in Chemistry, January 19, 1897.
D. A. Morton, Instructor in Organic Chemistry, March 23, 1897.
Ellen B. Canfield, Instructor in Physical Culture at Sage College, in charge of the Gymnasium for Women, May 18, 1897.
T. Whittlesey, Instructor in Chemistry, May 18, 1897.
C. S. Northup, Instructor in English, June 1, 1897.
C. L. Durham, Instructor in Latin, June 1, 1897.
R. C. Reed, Instructor in Comparative and Veterinary Pathology and Bacteriology, June 15, 1897.
J. Segall, Instructor in French, September 21, 1897.
E. J. McCaustland, Instructor in Civil Engineering, September 21, 1897.
C. W. Furlong, Instructor in Industrial Drawing and Art, September 21, 1897.
T. Hall, Instructor in Drawing in Sibley College, September 21, 1897.
C. H. Benedict, Instructor in Chemistry, September 21, 1897.
C. H. Rammelkamp, Assistant in American History, May 18, 1897.
I. M. Bentley, Assistant in Psychology, June 1, 1897.
G. L. Hoxie, Assistant in Physics, June 1, 1897.
W. N. Barnard, Assistant in Machine Design, June 15, 1897.
J. T. Newman, Lecturer on Practice and Procedure in the College of Law, June 15, 1897.
E. L. Moore, Demonstrator of Veterinary Anatomy, June 15, 1897.
J. M. Talmadge, Assistant in Chemistry, September 21, 1897.

The following reappointments have been made to the corps of instruction to take effect, unless otherwise stated, at the beginning of the year 1897–98:

D. C. Lee, Assistant Professor of Elocution and Oratory, March 10, 1897.
G. R. McDermott, Assistant Professor of Naval Architecture, March 10, 1897.
H. C. Elmer, Assistant Professor of Latin, March 10, 1897.
G. S. Moler, Assistant Professor of Physics, March 10, 1897.
F. Bedell, Assistant Professor of Physics, March 10, 1897.
E. G. Merritt, Assistant Professor of Physics, March 10, 1897.

H D. Williams, Assistant Professor of Mechanical Drawing, March 10, 1897.

A. C. Gill, Assistant Professor of Mineralogy and Petrography, March 10, 1897.

G. D. Harris, Assistant Professor of Palæontology and Stratigraphic Geology, March 10, 1897.

W. R. Orndorff, Assistant Professor of Organic Chemistry, March 10, 1897.

W. A. Hammond, Assistant Professor of Ancient and Mediæval Philosophy (to take effect August 1, 1898), March 10, 1897.

W. D. Bancroft, Assistant Professor of Chemistry, March 10, 1897.

H. H. Wing, Assistant Professor of Animal Industry and Dairy Husbandry, March 10, 1897.

H. S. Gutsell, Instructor in Drawing and Industrial Art, June 1, 1897.

G. B. Preston, Instructor in Experimental Engineering, June 1, 1897.

H. J. Hotchkiss, Instructor in Physics, June 1, 1897.

W. Strunk, Jr., Instructor in English, June 1, 1897.

J. S. Reid, Instructor in Mechanical Drawing and Designing, June 1, 1897.

F. J. Rogers, Instructor in Physics, June 1, 1897.

I. J. Macomber, Instructor in Electrical Engineering, June 1, 1897.

E. Albee, Instructor in Philosophy, June 1, 1897.

H. H. Lannigan, Instructor in Gymnastics, June 1, 1897.

A. H. Eldredge, Instructor in Mechanical Laboratory, June 1, 1897.

W. E. Mott, Instructor in Civil Engineering, June 1, 1897.

F. L. Kortright, Instructor in Chemistry, June 1, 1897.

V. T. Wilson, Instructor in Drawing in Sibley College, June 1, 1897.

H. P. Jones, Instructor in German, June 1, 1897.

D. Reid, Instructor in Drawing and Designing in Sibley College, June 1, 1897.

C. E. Timmerman, Instructor in Physics, June 1, 1897.

J. S. Shearer, Instructor in Physics, June 1, 1897.

D. A. Murray, Instructor in Mathematics, June 1, 1897.

H. N. Ogden, Instructor in Civil Engineering, June 1, 1897.

L. L. Forman, Instructor in Greek, June 1, 1897.

C. E. Houghton, Instructor in Experimental Engineering, June 1, 1897.

J. I. Hutchinson, Instructor in Mathematics, June 1, 1897.

E. D. Shurter, Instructor in Elocution and Oratory, June 1, 1897.

C. J. Bullock, Instructor in Political Economy, June 1, 1897.

F. E. Lodeman, Instructor in Romance Languages, June 1, 1897.

V. Snyder, Instructor in Mathematics, June 1, 1897.

J. F. Hayford, Instructor in Civil Engineering, June 1, 1897.

O. M. Brauner, Instructor in Drawing in the College of Architecture, June 1, 1897.

B. B. Stroud, Instructor in Physiology, Vertebrate Zoology, and Neurology, June 1, 1897.

J. T. Parson, Instructor in Civil Engineering, June 1, 1897.

O. Shantz, Instructor in Experimental Engineering, June 1, 1897.
E. J. Durand, Instructor in Botany, June 1, 1897.
E. B. Higby, Instructor in Drawing in the College of Architecture, June 1, 1897.
E. W. Olmsted, Instructor in Romance Languages, June 1, 1897.
A. A. Moore, Instructor in Romance Languages, June 1, 1897.
A. T. Bruegel, Instructor in Machine Design, June 1, 1897.
C. H. Sharp, Instructor in Physics, June 1, 1897.
H. H. Norris, Instructor in Electrical Engineering, June 1, 1897.
B. F. Kingsbury, Instructor in Microscopic Methods, Histology, and Embryology, June 15, 1897.
E. B. Lovell, Instructor in Civil Engineering, June 1, 1897.
G. B. Viles, Instructor in German, June 1, 1897.
C. L. Stanton, Assistant in Mechanic Arts, June 1, 1897.
F. C. Fowler, Mechanician in the Department of Physics, June 1, 1897.
J. Wiseman, Foreman of the Machine Shop, June 1, 1897.
W. W. Wood, Foreman in Wood Shop, June 1, 1897.
J. W. Granger, Foreman in Forging, June 1, 1897.
J. E. Vanderhoef, Foreman in Foundry, June 1, 1897.
W. O. Stubbs, Mechanician in the College of Civil Engineering, June 1, 1897.
A. D. MacGillivray, Assistant in Entomology, June 1, 1897.
G. C. Pollay, Assistant in Wood Shop, June 1, 1897.
R. Vanderhoef, Assistant in Foundry, June 1, 1897.
W. F. Raymond, Mechanician in Sibley College, June 1, 1897.
W. F. Head, Assistant in Forging, June 1, 1897.
F. Starkins, Assistant in the Machine Shop, June 1, 1897.
G. P. Knox, Assistant in Chemistry, June 1, 1897.
K. M. Wiegand, Assistant in Botany, June 1, 1897.
J. A. Bonsteel, Assistant in Geology, June 1, 1897.
C. R. Gaston, Assistant in English, June 1, 1897.
J. R. Lewis, Assistant in Elocution, June 1, 1897.
A. E. Taylor, Assistant in Chemistry, June 1, 1897.
J. F. Snell, Assistant in Chemistry, June 1, 1897.
O. M. Stewart, Assistant in Physics, June 1, 1897.
M. W. Roe, Assistant in Experimental Engineering, June 1, 1897.
G. A. Smith, Assistant in Chemistry, June 1, 1897.

L. A. Clinton, Assistant Agriculturist in the Experiment Station, May 25, 1897.
G. W. Cavanaugh, Assistant Chemist in the Experiment Station, May 25, 1897.
M. V. Slingerland, Assistant Entomologist in the Experiment Station, May 25, 1897.

B. M. Duggar, Assistant Cryptogamic Botanist in the Experiment Station, May 25, 1897.

E. A. Butler, Clerk in the Experiment Station, May 25, 1897.

J. L. Stone, Assistant in General Agriculture (for seven months), April 13, 1897.

G. A. Smith, Assistant in Dairy Instruction (for four months), April 13, 1897.

C. E. Hunn, Helper in the Horticultural Department (for six months), April 13, 1897.

A. L. Knisley, Assistant in the Chemical Department (for nine months), April 13, 1897.

G. T. Powell, to take charge of the work of school instruction (for six months), April 13, 1897.

J. W. Spencer, to take charge of the work of school instruction (for six months), April 13, 1897.

Louise S. Brownell, Warden of Sage College and Lecturer on English Literature, May 4, 1897.

E. P. Andrews, Curator of the Museum of Casts, May 11, 1897.

F. S. Crum, Assistant to the Registrar, June 1, 1897.

C. E. Cornell, Clerk of the State Veterinary College, June 15, 1897.

M. Fowler, First Cataloguer, June 15, 1897.

T. W. Koch, Cataloguer, June 15, 1897.

E. A. Runner, Cataloguer of Zarncke Library, June 15, 1897.

M. E. Griswold, Assistant in Ordering Department, June 15, 1897.

J. Thornberg, Assistant in Accession Department, June 15, 1897.

G. F. Danforth, Assistant in Reference Library, June 15, 1897.

H. M. Merrihew, Assistant in Library of the College of Law, June 15, 1897.

J. F. Hubbell, Assistant in Library of the College of Law, June 15, 1897.

APPENDIX II

REPORT OF THE DEAN OF THE UNIVERSITY FACULTY

To the President of the University:

SIR :—I have the honor herewith to submit my first annual report as Dean of the University Faculty. The details of the reorganization of the faculties of the University and the reasons for the changes made were given in your Report for 1895–96, pp. 33–37.

The statute describing the membership and functions of the University Faculty is as follows :

"3. THE UNIVERSITY FACULTY.—The University Faculty consists of the President, who is *ex officio* the presiding officer, and the Professors and Assistant Professors of the University, including the Professors and Assistant Professors of the New York State Veterinary College. It is the function of the University Faculty to consider questions which concern more than one Special Faculty, and questions of University policy. The Graduate Department is under the immediate charge of the University Faculty." *

Under the above statutes the University Faculty held its first meeting June 19, 1896, and completed its organization by the election of Professor C. H. Hull as Secretary, and the nomination by the President of Professor H. S. White as Dean, which was concurred in by the Faculty, and the appointment was afterwards made by the Trustees. The Faculty also voted that the legislation of the former General Faculty and of the Faculty of the School of Law remain in force and govern the University Faculty until further action should be taken ; and that the previously existing committees of the General Faculty be authorized to act for the University Faculty until further action should be taken.

The Faculty was notified later of the following vote of the Trustees :

"Moved and carried that, the General Faculty having been abolished, the Faculty members of the Library Council be elected by the two groups of Professors, Associate Professors and Assistant Professors specified in the University Statute 14, Section 3 ; and that the President be instructed to convene them in a special meeting for that purpose."

The duties of the Dean are defined by the statutes as follows :

"It is the function of the Dean to preside at the meetings of his Faculty in the absence of the President ; to receive and act upon such applications of students as may be referred to him by his Faculty ; to prepare and conduct the business of the several committees of which he may be made by his Faculty the chairman ; and, in general, except as otherwise provided, to act as the executive officer of his Faculty."

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* Besides the original jurisdiction herein conferred, another statute gives to the University Faculty the right of revision of action taken by the Special Faculties in all matters affecting general University policy.

Under this statute the Dean was made the *ex officio* chairman of the Committees on Admission by Certificate, on Graduate Work and Advanced Degrees, and was made a member of the Committee on the Register and Announcement of Courses. He was empowered in addition to supervise, as heretofore, the printing of 'extracts from the Faculty Records.

I. ADMISSION BY CERTIFICATE

During the current year nineteen schools have been informed, without comment, that the work of certain students admitted by certificate from those schools had not been uniformly satisfactory.

One school was notified, for a similar reason, that for the present no certificates on behalf of its graduates would be considered.

The most important question which came before the committee during the year arose in connection with a resolution referred to it by the Faculty, requesting that the committee consider the expediency of refusing, after June, 1898, to accept certificates in Greek, Latin, French, German, or Advanced Mathematics, except in cases where the student offering the certificate declares his intention of pursuing the subject in the University. After some discussion of the resolution, it was moved to table it on account of certain practical difficulties as a working system in the plan proposed, and the committee proceeded to examine the larger question involved, namely, the desirability of holding examinations in the above-mentioned advanced requirements in all cases. Although the deliberations of the committee have not yet been completed, there are certain general aspects of the question which are a matter of common interest and have often been discussed here and elsewhere. The desirability of this action has already been suggested in previous reports of the Dean of the General Faculty. (See President's Reports, 1892–93, p. 61 ; 1893–94, p. 72 ; 1895–96, p. viii.)

It has been indicated that, although the necessity is not clear of holding an examination in the minor and elementary entrance requirements which have found their place and served their due purpose in the earlier years of the curriculum, an examination might wisely be held in the above-mentioned advanced subjects, from the study of which the applicants are supposed to come fresh, and which they are in many cases to continue after entrance. An examination in such subjects would seem to involve no hardship and would not imply an extended review of portions of the preparatory curriculum long since completed. In some cases such an examination might even prove a benefit to the applicant, leading him to strengthen his preparation in some of the essential subjects of his course. The advantage of a uniform entrance test and the possible influence of such an esoteric scrutiny of the quality of the preparation in the secondary schools are obvious, and have been iterated.

Some of the objections to such an examination system are found in the reasons which have been urged in favor of a general certificate system. It is alleged that the consecutive tests of a prolonged school course would be as satisfactory and fair a gauge of the applicant's ability and attainments as a single examination under trying conditions or unfamiliar surroundings; and that the teacher who has been in daily contact with his pupils can therefore speak more intelligently of their performances and possibilities. It has been intimated indeed that school principals sometimes are subject to pressure from school authorities and family influence which render their certificates less trustworthy than the face-value. The burden of proof, however, may fairly be said to rest on the authors of such intimations. The certificate system has certainly the advantage of facilitating the transition from the school to the university and thus knitting the two groups of educational institutions into closer solidarity. Admission by certificate, on the other hand, is only provisional, and if the subsequent course of the applicant be unsatisfactory, his certificates may be cancelled. The beginning terms thus form a period of probation; and an analysis of the records at Cornell University for the past few years tends to prove, as has already been indicated in these reports, that the system is not producing evil results.

As systems of administration, there are advantages and disadvantages on both sides. The certificate system admits of considerable inequalities of preparàtion, and where an institution draws from schools scattered over the whole country, no efficient supervision is possible. Whether the quality of work done after admission will deteriorate must depend largely upon the watchfulness and strictness of those who are directly responsible for the initial university years. Under the certificate system, however, the area of the influence of the university may be widely extended. The national character of the constituency of Cornell University is largely owing to this system, a system which has become the prevailing system in the United States. The successful administration of the examination system here implies the maintenance and multiplication of a series of examinations at a great number of local centres scattered over the country, if Cornell is to continue to foster its following in distant states. This argument for the certificate system should not be confounded with the argument for numbers. Cornell could better afford, through increased entrance requirements, to lose a few hundred students from the large contingency in the State of New York than to have the seven hundred students from other states decimated through unnecessary barriers in the way of admission.

The system of admission by certificate is also to be affected in some way by the recent extension of the elective system to all years of the Department of Arts and Sciences, a system which is to go into effect for the first time fully, beginning with the fall of 1897. It is conceivable that if the opportunity for testing in the classrooms the preparation in those special advanced subjects which students offer at entrance should become less frequent, or be evaded, the necessity for entrance examinations in such subjects might become even more urgent. It is possible also that the general equipment of those admitted under the current system might still continue in the main adequate. And after all there is considerable force in the assumption of a former President of this University that "What we want is not so much students who can pass certain entrance examinations as students who can successfully do the work after admission."

It might not be inexpedient, then, in view of the uncertain nature of the operation of the elective system here, to make some very careful observations regarding the frequency with which subjects offered at entrance are afterwards elected, the standing maintained in such subjects, and the general standing gained by students who cast aside after admission all or nearly all of these subjects.

A change in the prevailing system here would manifestly be fraught with weighty and far-reaching consequences. Whatever that change then be, which comes, it should "be free to ingroove itself with that which flies," that no undue wrench be given to the machinery of education.

II. THE GRADUATE DEPARTMENT

The methods of procedure already established and developed by the committee on graduate work and advanced degrees (see report for 1892-93, pp. 69-71) have been generally observed during the present year. On the recommendation of the committee, however, the University Faculty has made a number of important changes in the regulations for advanced degrees. After the legislation of 1895-96 establishing a single bachelor's degree (A.B.), the committee was requested, in the spring term of 1896, to consider and report any changes which might seem advisable in the regulations for the master's and the doctor's degrees. In the fall term the following resolutions were adopted by the Faculty :

"*Resolved*: 1. That in place of the degrees of Master of Arts, Master of Philosophy, Master of Letters, and Master of Science, the one degree of Master of Arts be conferred ; and that in place of the degrees of Doctor of Philosophy and Doctor of Science, the one degree of Doctor of Philosophy be conferred.

2. That graduates of this University, or of other institutions where the requirements of the baccalaureate degree are substantially equivalent, may upon application be admitted to the graduate department. Such applicants may further be admitted to candidacy for the Master's or Doctor's degree above mentioned, in case the previous course of study and preparation in the major and minor subjects to be pursued is accepted as adequate by the departments concerned.

3. That the above resolutions concerning advanced degrees are not to affect existing applications, where the applicant may prefer the existing degree, for which he may be eligible. Otherwise that they go into effect at once."

As the result of this action the University proposes to confer in the so-called general courses a single degree of each grade: A.B., A.M., Ph.D. This action, like the action regarding the bachelor's degree, may at first be misunderstood or misinterpreted. Time alone can test the wisdom of these changes. For the present it may suffice to say that they have seemed to come about by a natural process of evolution, and that they have been attended by a gradual increase in the severity of the requirements for admission and for graduation. The path by which these degrees may be secured has been rendered no easier, although it may have become more diversified, leading through fields in which honest and voluntary work will produce the most effective and permanent results.

Another resolution adopted by the Faculty establishes October 15 as the limit of time for the acceptance of applications in the case of applicants who desire to receive credit for attendance during the whole of the academic year then entered upon, instead of November 1 as heretofore. Only by a special vote can this limit be modified. The resolution is intended to encourage promptness at the outset in beginning work, a promptness which is already the general practice.

By a vote of the Faculty, cases of graduate students who wish the acceptance of a year of graduate work done elsewhere in place of a year at this University, and cases of graduate students who wish to count time spent in study for the Master's degree in the time required for the Doctor's degree, are to be referred to the Committee on Graduate Work and Advanced Degrees, with power. Such cases are decided upon the recommendation of the special committee concerned.

A resolution passed, that "the decision regarding the acceptance of a graduate thesis be left to the judgment of the professor in charge of the department in which the thesis is written," was designed chiefly to avoid any possible misunderstanding where departments might overlap. The common and commendable comity and practice appears to be to submit to all the members of a special committee any thesis presented by a candidate under the direction of such committee.

A resolution to extend the minimum period of candidacy for the doctor's degree from two to three years was referred to the committee for consideration. After inquiry into the practice here and at other institutions, it appeared that the prescribed minimum varied from two to three years, while the actual time taken, especially at Cornell, was frequently longer than the minimum. It was therefore deemed advisable to modify the rule to suit the practice, and the following resolution was passed, to go into effect in 1898: "A candidate for the Doctor's degree is expected to spend at least three years at the University pursuing a course of study marked out by the University Faculty. In cases of exceptional proficiency a candidate may be recommended for the degree at the expiration of a shorter period." In the case of instructors and assistants, four years is to be the minimum period of candidacy.

The question whether it would be better to leave the requisition of a thesis for the master's degree to the discretion of the special committee was raised during the fall term, but was tabled, while discretion was voted to a special committee concerned in two cases presented. Later, in a debate in the Faculty of Arts and Sciences in reference to a similar proposition regarding the bachelor's degrees under its jurisdiction, it was decided to make no relaxation in the said requirement for the baccalaureate degree. A thesis is therefore one of the regular requirements for all degrees conferred by the University, except for the bachelor's degree in the College of Law.

The committee investigated during the year the practice regarding the requirement that a thesis accepted for the doctor's degree should be printed, and found that in this country no uniform regulation prevailed. At some institutions, such as Bryn Mawr, Chicago, Clark, Columbia, Cornell, Princeton, Western Reserve, and Wisconsin, the thesis must be printed. At Johns Hopkins, Michigan, and Stanford, the printing must be guaranteed. At others the printing must be done within a limited period. At Brown, Harvard, New York, Pennsylvania, and Yale, the printing is not required.

At Cornell, since 1875, the practice has been uniform of requiring the doctor's thesis to be printed, although the number of copies to be deposited in the University Library has varied from ten to fifty. The present regulation reads as follows:

"Successful candidates for the degree of Doctor must print their theses and deposit twenty-five copies in the Library. On the title page of each of these copies shall appear the statement that the thesis was presented to the Faculty of Cornell University for the degree in question. The diploma for the degree shall be withheld until the required number of copies of the theses shall be so deposited."

A report made by the University Librarian showed that up to the year 1894 all such deposits had been made except in four cases. In at least two of these cases the delay was sufficiently explained. Since 1894 the deficiencies appear to be more numerous; but in nearly every instance the investigation indicated that the requirement was likely to be met within a reasonable time. It was evident that a thesis could not be printed within the short space intervening between its acceptance in May and the bestowal of the degree in June. The necessary expense, too, was often a serious financial burden upon a young scholar with limited means, and needed to be distributed over a number of years. Not every thesis can be printed without expense as a part of the proceedings or publications of some society or institution. Yet publication forms a kind of safe-guard for sound work, and affords an open standard of criticism of the attainments of a candidate.

At the conclusion of the inquiry a resolution was adopted by the Faculty that before the doctor's degree be conferred, a type-written copy of the thesis must be deposited in the University Library. The regulation for printing was left unchanged.

The private circular of information regarding graduate work which was issued for the benefit of members of the Faculty in July, 1895, was revised during the present year so as to embody the various changes which had been made since its first appearance, and was distributed to the Faculty in April, 1897.

The candidates for advanced degrees during 1892–97 were distributed as follows:

I. By degrees:	1892–93	1893–94	1894–95	1895–96	1896–97
A. M.	9	15	3	3	14
Ph. M.	2	6	3	6	—
M. L.	8	12	7	4	—
M. S.	33	23	13	15	11
M. C. E.	7	18	13	5	3
M. M. E.	31	48	36	18	10
Ph. D.	58	77	67	58	79
D. Sc.	19	31	31	22	16
Total	167	230	173	131	133

The change in distribution in 1896–97 is explained by the modification in the form of advanced degrees already described.

II. By subject (each minor counted separately):

SUBJECT	MAJOR					MINOR				
	'92–3	'93–4	'94–5	'95–6	'96–7	'92–3	'93–4	'94–5	'95–6	'96–7
Semitic Languages	–	–	–	–	–	–	–	–	–	1
Class. Archæology and Hist. of Art	1	1	0	1	1	1	3	4	1	2
Comparative Philology	3	2	3	0	1	8	15	11	7	6
Greek	3	6	4	1	3	3	3	4	7	5
Latin	1	3	3	4	3	3	9	5	3	3
Germanic Languages	3	3	4	4	4	1	3	3	5	5
Romance Languages	1	4	2	3	6	2	2	3	6	9
English	9	22	12	11	12	11	24	10	12	17
Philosophy	18	23	20	20	14	32	38	35	37	30
History and Political Sci.	19	22	20	16	15	37	54	45	28	31
Mathematics and Astron.	9	13	5	4	4	20	31	27	16	21
Physics	16	20	15	9	12	16	35	31	20	14
Chemistry	15	22	16	11	14	24	21	13	11	14
Botany and Arboriculture	5	2	6	6	7	13	11	12	14	15
Entom. and Gen. Inv. Zool.	6	5	2	1	2	5	6	8	3	4
Physiology and Vert. Zool.	7	7	4	1	2	9	10	7	3	3
Anatomy	–	–	–	–	0	–	–	–	–	1
Micros. and Embryology	–	–	–	–	0	–	–	–	–	3
Geol., Paleont. and Mineral.	2	2	2	2	4	2	6	5	8	11
Agriculture	3	0	0	4	5	3	1	0	2	6
Horticulture	5	3	1	4	6	2	0	0	1	4
Architecture	1	1	1	1	1	2	0	0	0	1
Civil Engineering	7	20	16	8	4	8	20	18	10	5
Mechanical Engineering	33	49	38	20	13	34	44	31	19	16

During the past ten years 794 graduates of one hundred and forty-six institutions have been admitted to graduate work, distributed as indicated in the following table:

Acadia	5
Adelbert	1
Alabama, Agr. and Mech. Coll.	1
Albion	1
Alfred	2
Allegheny	2
Amherst	4
Anatolia	1
Arkansas	2
Bates	2
Beloit	2
Boston	4
Bowdoin	1
Brooklyn Poly.	1
Brown	9
Buchtel	5
Bucknell	2
California	3
Campbell	1
Capitol	1
Carleton	2
Chaddock	1
Cincinnati	1
Colgate	1
Colorado, Univ. of	2
Colorado, School of Mines	1
Columbia	1
Columbia School of Mines	1
Columbia School of Law	1
Cornell College	2
Cornell University	333
Dalhousie	17
Dartmouth	2
Davidson	2
Dennison	1
Denver	1
DePauw	11
Earlham	4
Elmira	2
Erlangen	1
Franklin	3
Furman Univ.	1
Ghent, State Univ. of	1
Hannover, Tech. Hochschule	1
Hamilton	4
Harvard	7
Harvard Annex	1
Harvard (Lawrence Scientific)	1
Haverford	1
Hillsdale	2
Illinois	6
Illinois Wesleyan	1
Indiana	21
Iowa Agr.	5
Iowa Coll.	4
Iowa State	2
Japan Imperial Univ.	1
Johns Hopkins	3
Kansas Agr.	2
Kansas State Univ.	6
Knox	6
Lafayette	1
Lake Forest	1
Lawrence	1
Lehigh	6
Lombard	1
London	1
Luther	3
McGill	4
McKendree	1
Maine Agr.	5
Manitoba	7
Mason Coll. (Birmingham)	1
Massachusetts Agr.	3
Massachusetts Inst. of Tech.	4
Michigan Agr.	3
Michigan Univ.	12
Milton	1
Minnesota	9
Missouri State	1
Mt. Holyoke	1
Mt. Union	1
Napa	1
Nashville	1
Nebraska	4
Newberry	1
Newcomb	1
New Hampshire Agr.	1
New York, Coll. of the City of	5
North Carolina	2
Northwestern Univ.	3
Notre Dame	1
Oberlin	6
Ohio State	4
Ohio Univ.	2
Ottawa	1
Otterbein	1
Oxford	1
Pacific Univ.	1
Pennsylvania State	1
Pennsylvania Univ.	1
Pennsylvania Western Univ.	1
Pine Hill Theo. Sem.	1
Princeton	4
Purdue	9
Queen's Univ. (Kingston, Can.)	2
Rensselaer Poly.	1
Rochester	4

Rose	3
Rutgers	2
St. Andrews (Scotland)	1
St. Petersburg	1
Smith	19
South Carolina	3
South Dakota Agr.	3
Southern California	2
St. Olaf	1
Stanford	7
Stevens Inst.	4
Strassburg (Germany)	1
Swarthmore	2
Sidney Univ. (New So. Wales)	2
Syracuse	10
Texas	4
Texas Agr.	2
Tokio Univ.	1
Toronto	10
Trinity Coll. (Toronto)	1
Tulane	1
U. S. Naval Academy	3
Vanderbilt	1
Vassar	12
Vermont	1
Victoria	1
Virginia	4
Virginia Agr. and Mech. Coll.	2
Wabash	1
Washington University	2
Wellesley	7
Wells	1
Wesleyan	3
Westminster	2
Wheaton	2
Williams	3
Wilson	1
Wisconsin	2
Wittenberg	1
Wooster	2
Worcester Poly.	3
Yale	11
Yale Theological Sem.	1
Yale (Sheffield)	3

Graduate students who are not candidates for a degree, as well as those who are, have been required to work under the direction of a special committee of the Faculty. The numbers of such students during the years 1889–97 are as follows:

1889–90	'90–91	'91–92	'92–93	'93–94	'94–95	'95–96	'96–97
6	2	2	4	1	11	14	18

The variation in the above figures, as previously explained, is caused by the change in the regulations governing tuition fees. Previous to 1890 no tuition was charged for resident graduates, whether candidates for degrees or not. Beginning with 1890, tuition was free for only such graduates as had been duly admitted as candidates for an advanced degree. But beginning with 1894, as has already been pointed out, tuition has been charged for all resident graduates, whether candidates for a degree or not. Accordingly resident graduates who might have registered for an advanced degree on account of the saving of tuition, although in some cases desiring to pursue a wider range of study than would be thus allowed, are not now hampered in the arrangement of their work by the financial consideration, which no longer affects the question of classification in the graduate department. The absence of this consideration, which has long been a disturbing factor in other respects too, has been a distinct gain in the administration of the department.

The advanced degrees conferred during the past ten years are indicated in the following table:

Advanced degrees conferred 1888–97 :

	1888	'89	'90	'91	'92	'93	'94	'95	'96	'97	Total
A.M.	3	1	8	6	6	4	8	2	1	10	49
Ph.M.	--	--	--	--	2	0	3	1	3	0	9
M.L.	--	--	--	--	1	3	2	3	0	0	9
M.S.	3	6	7	7	7	6	10	7	12	6	71
M.C.E.	1	--	1	2	--	2	8	4	0	1	19
M.M.E.	2	1	6	3	6	14	16	8	15	6	77
Ph.D.	3	1	2	3	8	4	16	13	14	11	75
D.Sc.	--	--	--	--	--	2	3	6	3	3	7
Total	12	9	24	21	30	35	66	44	48	37	326

The cause of the change in the distribution of degrees during the current year has already been described. (p. IX.)

RECOMMENDATIONS

Certain recommendations regarding the Graduate Department which at present seem desirable, are deferred until a later date.

III. FACULTY LEGISLATION

The action taken by the University Faculty in the process of completing its organization and establishing its committees has been elsewhere described, as well as the modifications in various requirements affecting the Graduate Department.

The right of revision conferred by statute upon the University Faculty, described at the beginning of this report, was exercised during the year in several important instances.

The special faculty of the College of Architecture, at a meeting held October 9, 1896, decided to change the degree to be conferred upon graduates in the College of Architecture from Bachelor of Science in Architecture to Bachelor of Architecture. This action was communicated to the University Faculty and was approved by the following resolution :

"WHEREAS the form of the degree to be conferred at this University is an educational matter of university policy, therefore

Resolved, that the University Faculty in the exercise of powers conferred upon it by the statute passed the 26th of May, 1896, approves the action of the Faculty of the College of Architecture in so changing the said degree."

The special faculty of the College of Agriculture, at a meeting held March 18, 1897, decided to change the degree to be conferred upon graduates in the College of Agriculture from Bachelor of Science in Agriculture to Bachelor of the Science of Agriculture (B.S.A.). This action was communicated to the University Faculty which in the exercise of the powers already cited, approved of the change.

The Faculty of Arts and Sciences received a communication during the year from an alumnus of the University who had received the degree of Bachelor of Literature in 1883, and who asked the Faculty that it be changed for the degree of Bachelor of Philosophy, which would at present quite nearly correspond to the course which he had then pursued. He was informed that the Faculty of Arts and Sciences did not deem it advisable to recommend the change in his degree desired by him. This action was reported to the University Faculty for its consideration, and received its approval. The action was of considerable importance, as it practically establishes the policy of the University Faculty in cases where students who had graduated in certain courses desired to exchange their degree for degrees established since their graduation. This policy would also affect all applications for a change from an older degree to the new degree of Bachelor of Arts, which is first to be conferred in 1901. The policy thus implied would apparently be to decline to effect any such changes. The significance of the specific degree conferred at Cornell would then be commonly decided by the date at which it was conferred.

For one regulation governing the oratorical competition for the Woodford prize, namely, that "any member of the senior class who is to receive a degree at the coming Commencement, may be a competitor provided he has taken at least one course of instruction in elocution and oratory," the following more liberal substitute was adopted: "Any member of the graduating class who is to receive a degree at the coming Commencement and who does not already hold a first degree may be a competitor."

On a motion proposing certain regulations for the selection of student speakers at Commencement exercises, it was resolved that the suspension of the rules governing the Commencement stage, voted for June, 1896, be made permanent and that the arrangements for Commencement be left in the hands of the President, with the assurance that the programme of last year was acceptable to the Faculty. This action is the culmination of a series of experiments regarding those exercises. Ever since the graduation of the first class in July, 1869, members of the graduating class have taken part in the final ceremonies by delivering orations or addresses, or by reading essays or portions of theses, while occasionally the Woodford Oration has been repeated on that occasion. This general practice was in harmony with the traditions of the older colleges and universities in this country, at whose closing exercises it was customary that a part, if not all, of the members of the graduating class should be heard; and at Cornell University the tradition was naturally followed. The modification in the nature and quality of the thesis required for graduation began gradually, however, to affect the nature of the Commencement exercises. Originally the graduating thesis was a sort of essay or composition of varying excellence. Largely through the influence of the technical departments, in which the thesis represents a serious performance, the theses which were presented in the general courses began to increase in worth, until it was finally decided to recognize such performances by giving a number of hours of credit for the thesis itself. It became no longer possible to present the thesis as a whole upon the Commencement stage, and the custom grew up of delivering a portion only of the production. Many of the most meritorious theses, however, were of so technical or special a character that it was not always feasible to present even portions of them. An additional essay or oration was therefore required for delivery at Commencement time, although ultimately it was left optional with the members of the senior class whether they should compete for this opportunity. In recent years it has been felt that the distractions of the final weeks of the course were so great as to preclude the possibility of an adequate representation on the Commencement stage of the best material available in the senior class. It has sometimes been difficult to secure the requisite number of speakers for the occasion, and at Commencement, 1896, the ordinary procedure was suspended and the President was requested to prepare a programme. The only address made on that occasion was by the President himself to the graduating class, and the results of the experiment proved so satisfactory that the Faculty during the current year, as has already been mentioned, resolved that the suspension of the rules governing the Commencement stage should be made permanent; that is to say, that student representation upon the Commencement stage no longer seemed essential or perhaps even desirable. Nevertheless, it ought to be said that this action was not taken with a view of discouraging the appearance in public of our undergraduates or graduates. On the contrary it was believed that in the exercises of the senior Class-Day, in the active competitions for the junior and senior prizes in elocution and oratory, and in the successful intercollegiate debates which have been initiated, ample and appropriate opportunity was afforded to the student body to appear in public in a most natural and satisfactory manner. The growth of the University, meanwhile, seemed to require this break with early traditions. It was considered to be one of a number of signs indicating the gradual transition from college to university methods which is now going on at Cornell.

Respectfully submitted,

HORATIO S. WHITE,

Dean of the University Faculty.

APPENDIX III

REPORT OF THE DEAN OF THE FACULTY OF ARTS AND SCIENCES

To the President of the University:

SIR :—I have the honor herewith to submit my first annual report as Dean of the Faculty of Arts and Sciences. The details of the reorganization of the Faculties of the University and the reasons for the changes made were given in your Report for 1895–96, pp. 33–37.

The membership and functions of the Faculty of Arts and Sciences are described in Chapter IV of the Statute for the Reorganization of the Faculties of Cornell University, under the heading, "The Special Faculties."

"Each Special Faculty is composed of the President, who is *ex officio* the presiding officer, and all Professors, Assistant Professors and Instructors who teach in the department or departments under the charge of that Faculty; but Instructors shall not have the right to vote. Subject to the right of revision by the University Faculty, on all matters affecting general University policy, it is the duty of each Special Faculty to determine the entrance requirements for its own students; to prescribe and define courses of study for them; to determine the requirements for such degrees as are offered to students under its jurisdiction; to enact and enforce rules for the guidance and government of its students; and to recommend to the Trustees such candidates for degrees as may have completed the requirements."

Under this statute the Faculty of Arts and Sciences held its first meeting, June 19, 1896, and completed its organization by the election of Professor W. F. Willcox as Secretary, and the nomination by the President of Professor T. F. Crane as Dean, which was concurred in by the Faculty, and the appointment was afterwards made by the Trustees. The Faculty also voted that the legislation of the former General Faculty remain in force and be held to govern this Faculty until further notice; and that the previously existing committees of the General Faculty be authorized to act for this Faculty until further action be taken.

The duties of the Dean are defined by the statutes as follows:

"It is the function of the Dean to preside at the meetings of his Faculty in the absence of the President; to receive and act upon such applications of students as may be referred to him by his Faculty; to prepare and conduct the business of the several committees of which he may be made by his Faculty the chairman; and in general, except as otherwise provided, to act as the executive officer of his Faculty."

The previously existing committees of the General Faculty continued in force until December 4, 1896, when the following standing committees of the Faculty of Arts and Sciences were appointed: a Committee on Advanced Standing; a Committee on Doubtful Cases; a Committee on Records of Candidates for Graduation; and a Committee on Changes in Registration, of which committees the Dean was made *ex officio* chairman.

I. ADVANCED STANDING

In accordance with the resolution passed at the first meeting of the Faculty of Arts and Sciences, June 19, 1896, the existing committee of the General Faculty on Advanced Standing administered the cases arising during the vacation and at the beginning of the following term. At an early meeting of the University Faculty (September 25, 1896), the question of the appointment of a University Committee on Advanced Standing was discussed, and it was finally moved and carried at a subsequent meeting, (October 2, 1896), that cases of admission to advanced standing be referred to the Special Faculties concerned.

The cases of advanced standing for the present year having been provided for by the previous committee, as has already been stated, no enumeration of these cases will be made here.

II. ON DOUBTFUL CASES

The Faculty, acting through the Committee on Doubtful Cases, temporarily removed from the University at the end of the fall term twelve students for deficiency in scholarship, and warned or referred seventeen others; at the end of the winter term eight were removed and twenty-one other cases were warned or referred; at the end of the spring term three were removed and ten others warned or referred.

III. RECORDS OF CANDIDATES FOR GRADUATION

The Committee on Records of Candidates for Graduation reported favorably on the following numbers of candidates, who were afterwards recommended by the Faculty of Arts and Sciences and received degrees at Commencement:

Arts	39
Philosophy	49
Science	34
Letters	16

IV. ON EXTRA HOURS AND CHANGES IN REGISTRATION

The jurisdiction of this committee now includes cases of substitution for required work and the decision in cases of petitions for permission to graduate in less than four years.

The number of petitions acted upon during the year was 1035. It is difficult to give an exact numerical classification of the categories of these petitions. They included petitions to discontinue work already registered for; to change work already registered for; to substitute other studies for required work ; to take extra hours, etc.

The Committee has granted the first class freely, believing that students should be encouraged to confine themselves to a smaller range of studies, to which they can give more time. Extra hours have been uniformly refused under the rule (Section 12), which says: "But a petition to take more than the maximum number of hours will not be entertained, unless the petitioner has received permission to graduate in less than four years." Extra hours have, however, been granted in a particular term when the average of the year has not exceeded the maximum, and a small number of additional hours have sometimes been allowed when necessary for graduation.

In the other categories when the petitions have been duly approved by the professors concerned they have been granted, unless by inadvertence some rule of the Faculty had been violated, when they have been referred to the Faculty for consideration.

With the next year the class of petitions asking for permission to substitute for required work will gradually diminish and finally cease with the class graduating in 1900. The petitions for discontinuing work and especially for change in work already registered for will probably increase.

In view of the fact that from next year on all work in the Academic Department will be elective (with the exception of military drill, gymnasium, and thesis), it should seem that students who have deliberately selected their own studies should be required to pursue them unless some extraordinary reason for their discontinuance arises. This is especially true of what are known as continuous courses, or work like beginning Spanish, Italian, French, German, etc. The present rule on the subject (Section 4) is: "A subject once elected must be carried through to completion, otherwise credits already received may be cancelled." As a matter of fact, however, the penalty imposed for the violation of the rule is scarcely ever exacted, and an instructor is usually disinclined to require the presence of a student who is an unwilling attendant of the class.

If an explicit statement of the reason for the desired change were required before the approval of the instructor concerned were given, and if it were understood that withdrawal without sufficient excuse would be followed by a cancellation of the credits already received, the evil would be diminished.

While all work in the new course is elective, with the exceptions stated above, students are advised and encouraged to lay out definite or systematic lines of study. This recommendation can not be rendered effective unless some means is devised by which it may be known at any time whether a student is actually taking the work for which he is registered, and unless after selecting a certain course of study he is required to pursue it until completed.

The former difficulty is the more serious of the two and no adequate remedy for it has yet been devised. After a student is once a member of a class the responsibility for his attendance is upon his instructor; but if after registration the student fails to appear in the class for which he is registered the instructor has no way of knowing it and the fact may not be discovered until the end of the term, and then only if the case should happen to come before the Committee on Doubtful Cases. The difficulty is still further increased by the fact that many of the classes in the Academic Department are attended by the members of other Colleges and any method of meeting the above difficulty would have to be a matter of general University arrangement to be effective. I shall have to content myself with pointing out the difficulty and hoping that some adequate remedy may yet be devised.

In this connection I would call attention to another rule (Section 10), which is sometimes misunderstood. It reads: "If a student does not pass at least ten hours in any term the case will be investigated and he may be temporarily removed from attendance on University duties." The inference has been drawn from this that a student might neglect all work for which he was registered in excess of ten hours and still continue in the University. This would enable a freshman to drop seven, and the other classes eight hours of work without any excuse. It is hardly necessary to say that this inference is incorrect, and that it has always been expected that unless duly excused by the Faculty, a student would pursue all the work for which he was registered, and pass satisfactorily at least ten hours of it.

V. ON LEAVES OF ABSENCE, INCLUDING LATE REGISTRATION

The Dean is authorized to grant leaves of absence from town for satisfactory reasons, except in cases of absence extending over term examinations. Excuses for absence on account of illness are now recommended by the Professor of Physical Culture, to whom doctors' certificates are to be submitted for his endorsement; and this item is accordingly omitted from the analysis of the current year. All other excuses for absence are to be presented to the heads of the departments concerned. By a vote of the General Faculty, passed December 12, 1885, the keeping of a record of absences is to be left to the discretion of the heads of departments. During the past year leaves of absence have been granted as follows:

	Fall	Winter	Spring
Personal illness	4	7	6
Illness in family	11	13	11
Weddings	4	5	3
Business summons	12	11	16

Delegates to conventions	12	6	5
Athletic teams, etc.	0	14	3
Voters	43	1	0
Miscellaneous	4	12	15

The Faculty Committee on Athletics also granted in the spring term 40 leaves of absence, for one day or part of a day each, to students in the Academic Department.

Considering the fact that there are 580 students under the jurisdiction of the Dean of the Faculty of Arts and Sciences, the above number of leaves of absence does not seem excessive. It should also be remembered that the presidential election occurred during the present year.

The Dean is also authorized to grant permission to register to students who arrive after Registration Day. Of such cases, in which excuses more or less valid were presented, and in the majority of which the delay occasioned was not more than two or three days, there were during the past year the following number:

Fall	20
Winter	118
Spring	33

In regard to the apparently excessive number of those who registered late in the winter term, it may be said that only 43 received permission to register late under the usual arrangement; the remainder were on various trains which should have reached Ithaca in time for registration, but were detained for various reasons. Those who were late in consequence of this were required to petition for leave to register, with a statement of the reason for delay. Hence the apparently large number of late registrations for this term.

Considering the shortness of the winter and spring vacations, it seemed best to afford students an opportunity to register sufficiently early in the morning following Registration Day to enable them to be present at the first exercise of the day, thus allowing them to return by the late trains of the previous evening or the early trains of the morning. In many cases this will enable the student to enjoy his entire vacation at home. In regard to those living at a considerable distance, it has always been the custom to grant permission to register a day or two late.

Almost all the applications for late registration in the spring term were from seniors who had already made the number of hours required for graduation, and for various reasons desired to prolong their vacation. The Dean of the General Faculty in his last report, 1895–96 (Appendix II, p. xii), calls attention to this tendency of seniors to drop off from their work at the end of the year, to take a small number of hours in the spring term, and to neglect the final examinations. A remedy may perhaps be found in the refusal of individual professors to countenance absence from work in their classes or to admit students who register so late as to be unable to perform satisfactorily the work of the term. If the minimum number of hours for seniors, ten, is insisted upon by the Committee on Changes in Registration, and permission to register late is given only on explicit and satisfactory reasons, the difficulty may perhaps be diminished if not altogether removed.

FACULTY LEGISLATION

The reorganization of the University and the consequent division of the General Faculty into a number of Special Faculties has naturally largely diminished the labors of each. The Faculty of Arts and Sciences has met regularly once a month for an hour or less. It was not to be expected that the legislation of the present year could equal in interest and importance that of last year when the reorganization of the University was accomplished and the new Course in Arts was created, still a number of important questions have been decided during the present year, as the following detailed statement of the legislation of the Faculty of Arts and Sciences will show.

By previous legislation (Extracts from Faculty Records, p. 8, Records C, p. 556), juniors and seniors in good standing in the General Courses were allowed, under permission of the General Faculty and with the consent of the Law Faculty in each case, to elect studies in the Law School which should count toward graduation, both in that School and in the General Courses, but the sum total of hours so elected was not to exceed the number required for one year's work in that School. Under this rule many of the best students in the General Courses took in one year the whole amount of work permitted, and spent their entire senior year, including their thesis work, in the Law School. This practical withdrawal from the General Courses of a considerable number of the best scholars at the time when they were most fitted to pursue advanced studies, was soon felt to be a serious detriment to the General Courses, and one of the earliest acts of the Faculty of Arts and Sciences was the reconsideration of the above rule and its amendment (December 4, 1896) as follows: "Juniors and Seniors in good standing in the department of Arts and Sciences may be allowed, under permission of the Faculty of that department and with the consent of the College of Law in each case, to elect studies in the College of Law which shall count toward graduation both in that School and in the Department of Arts and Sciences; but the sum total of hours so elected must not exceed the number for one year's work in the College of Law, and must not exceed nine hours in either year."

This action was later (May 12, 1897) made of general application to all Colleges, by the following resolution: "Juniors and Seniors in the Academic Department are allowed, with the permission of the Faculty of Arts and Sciences and with the consent of the Faculty concerned in each case, to elect studies in other Colleges which shall count toward graduation in the Academic Department; but the sum total of hours elected cannot exceed the number required for one year's work in such Colleges, nor exceed nine hours per week in any term."

In May, 1896, the General Faculty reorganized the General Courses, creating in effect a single course, although with different entrance requirements, and with freedom of election, under certain restrictions, from the beginning of the course. This new course was to go into operation in September, 1897, at which time the only class in the University under the old system of required work during the first two years, would be the class which entered in 1896, and which would still have one year of required work to perform. It was felt that it would be anomalous, to say the least, that the freshman class should have freedom of election, and the sophomore class be held to required work, and on February 5, 1897, the Faculty of Arts and Sciences voted to give the sophomore class the same freedom of election as the other classes. By this action all classes in the Academic Department will, beginning with September, 1897, have the same freedom of election.

Another action of great importance was also taken in regard to a matter intimately connected with the new course in the Academic Department. It was felt that the new course should not begin until the date originally assigned, September, 1897, and with the exception of the above action relieving one class from its required work for one year, no one was allowed to anticipate the new system during the present year by exemption from required work, and it was understood to be the policy of the Faculty that the new degree of Arts should not be granted until June, 1901. The question arose at the Faculty meeting of March 5, 1897, as to the policy of the Faculty in cases where students who had graduated in certain courses wished to exchange their degrees for degrees established since their graduation. An alumnus of the University who had received the degree of Bachelor of Literature in 1883, asked the Faculty that it be changed for the degree of Bachelor of Philosophy. He was informed that the Faculty of Arts and Sciences did not deem it advisable to recommend the Trustees to make the change in his degree desired by him.

Although this action concerned immediately the Academic Department alone, it was felt that it was desirable that it should be made a matter of general University policy, and accordingly the action was reported to the University Faculty for its consideration, and received its approval. This action may be considered a declaration that the degrees in the General Courses granted by the University in the past will not be exchanged for the new degree of Bachelor of Arts.

Among the requirements for graduation in the General Courses has always been a thesis, and in the reorganization of these courses in May, 1896, such thesis was made (together with Military Drill and Gymnasium) the only required work in the new course. Early in the year (October 2, 1896) a resolution was introduced in the Faculty of Arts and Sciences making the thesis elective. The words of the resolution were :

"*Resolved*, That hereafter no thesis be required of candidates for the baccalaureate degree, but that any candidate for that degree be permitted to write a thesis under the direction of any department in which he shall have successfully taken at the time of the approval of his thesis subject not less than twelve hours. For such thesis, if accepted, credit may be allowed in the discretion of the head of the department concerned to an amount not to exceed three hours in any one term, or nine hours in all."

The resolution was laid upon the table, and at the following meeting of the Faculty (October 16, 1896) various amendments were offered in regard to the number of hours of credit to be given for the thesis. After discussion the resolution was again laid upon the table, and has not since been debated.

Respectfully submitted,

T. F. CRANE,

Dean of the Faculty of Arts and Sciences.

APPENDIX IV

REPORT OF THE DIRECTOR OF THE COLLEGE OF LAW

To the President of the University:

SIR :—The total number of students registered in the College of Law is three hundred and eight: an increase over last year of fifty-six, and the largest enrollment in the history of the School. Its steady growth I believe to be mainly due to the thoroughness of its work, and the success in their profession which its graduates deserve to attain. The registry shows the same wide area of student-supply which characterized previous years. From New York there are two hundred and sixteen ; from Illinois twenty-two ; from Pennsylvania eleven ; from Ohio eight ; from Utah five ; from Michigan, California, New Jersey, and Wisconsin four each ; from Canada, Massachusetts, and Indiana, three each ; from Colorado, Maine, and Nebraska two each ; and from Delaware, Missouri, Georgia, Kentucky, Connecticut, Texas, Virginia, Iowa, Vermont, Washington, Minnesota, Tennessee, District of Columbia, and Maryland one each. Whatever the distance or jurisdiction from which these students came, we were able from the resources of our library to furnish them with the statutes and reports of their own localities as completely and perfectly as they would have found them at home.

Graduate Scholarships were awarded for the current year to Thomas Francis Fennell of Elmira, N. Y., Joseph Alfred Greene of Cold Spring, N. Y., Robert Harper Murray of Halifax, Nova Scotia, William James Schultz of Binghamton, N. Y., and James Harris Vickery of Halifax, Nova Scotia.

The Summer School of last year gave instruction to forty-seven students, of whom twenty were from New York, three from Massachusetts, two each from the District of Columbia, Delaware, New Jersey, Ohio, Michigan, Mississippi, and Hawaii, and one each from Pennsylvania, Utah, Illinois, Alabama, Vermont, Virginia, California, Iowa, Georgia, and Canada. Of these, seventeen were college graduates, and three attorneys already admitted to the bar. The number enrolled slightly exceeded that of the previous year.

Our present attendance very nearly exhausts the capacity of the Law Building. A continued increase would soon raise a problem for the solution of the Trustees, but I think it may be waived for a time, since the new and higher standard of preparation required, and the extension of the course of study from two years to three will be quite certain to lessen our numbers, at least temporarily, and may do so to a considerable extent. I anticipate such a reduction. Indeed, with the constant multiplication of law schools we can hardly expect at any time a much larger attendance than at present, although experience has taught us that we do not know. Any serious increase will involve the necessity of some addition to our accommodations but suggestions in that respect may be reserved for the emergency if it shall arise. The building and its rooms have been maintained in good order and condition with very little of injury except occasional ink upon the floors or writing upon the desks which I hope in the future to prevent entirely. The lawn at the north front of the building can never be preserved and maintained until a stone walk is laid to the street-car station. In the winter and early spring the approach to that station is through mud and pools of water involving much of discomfort to all of us, and ending in a serious destruction of the lawn. The proper remedy may be easily applied.

Near the close of the winter term and through the whole of the spring term a serious illness deprived us of the services of Professor Wm. A. Finch both as Secretary and as instructor in the law of real estate. In the work of the Secretary's office I have been largely assisted by Professor Huffcut, who has cheerfully borne a great part of the burden and kept control of current details. The instruction in real estate was carried to its promised conclusion partly by myself and partly by Mr. Jared T. Newman, who kindly turned aside from the active work of his profession to help us in an emergency. Under the disadvantage of a necessarily hurried preparation and an unfamiliar occupation he proved a very successful teacher and manifested both learning and the ability to communicate it clearly. We have appreciated greatly his valuable assistance.

At my special request Professor J. H. Tanner gave to the senior class three lectures upon the mathematical problems of the law, stating the legal rule in each case and pointing out and explaining the methods of solution. The gross value of a wife's inchoate right of dower during the life of her husband and the surrender value of policies of life insurance, in cash or in paid up policies, were two of the subjects discussed and indicate the drift of the instruction. I hope they may be repeated in the future, with a more liberal allowance of time. The non-resident lecturers on Patents and Medical Jurisprudence occupied an hour a day during two weeks in the month of May.

The other members of the Faculty have pursued their duties steadily and successfully, and with industry and zeal, and have fully justified the confidence reposed in them. We need, however, an additional Professor or Instructor who can devote his whole time to teaching Practice and Procedure. The day has passed in which ordinarily a student can learn Practice in a law-office. The expert stenographer and type-writer have largely displaced the copying clerk, and the student's opportunity to become familiar with legal papers has almost disappeared. The law schools, therefore, must teach Practice more thoroughly and systematically than has been usual. To do that as fully as we desire, will require the aid of an additional Professor; but I am not without hopes that I can suggest a method of reaching the result for the coming year without drawing too heavily upon the resources of the University. In this connection I must again call attention to the need of an appropriation for binding the briefs and cases which are very kindly furnished to us by the Court of Appeals. They are full of precedents covering almost every phase of Procedure, and beyond their interest as supplying the ultimate law of the State, would furnish to a teacher of Procedure examples and models in almost every direction, but until they are bound their utility cannot be developed. It would cost from eight hundred to a thousand dollars to bind the cases which have accumulated. If that could be given us, an appropriation not exceeding one hundred dollars a year would enable us to keep up with the current supply.

Changes have been made in the arrangement and distribution of the books in the Library which have resulted in additional shelf room, and which are more fully described in the report of the Librarian. He has acknowledged many valuable gifts; and among them one of the most notable is the six portraits of distinguished Jurists with which the generosity of ex-President White has adorned our walls. I am sure that the great importance of keeping up the reports in the Library and adding new publications of value will be fully appreciated by the University authorities and secure the needed appropriations.

The graduating class at the approaching Commencement will number eighty-one for the degree of LL.B. and seven for the degree of LL.M.

Respectfully submitted,

F. M. FINCH,

Director of the College of Law.

APPENDIX V

REPORT OF THE DIRECTOR OF THE COLLEGE OF AGRICULTURE

To the President of the University:

SIR :—It gives me pleasure to report that the College of Agriculture has steadily increased in efficiency, and is now reaching, instructing, and energizing the "industrial classes" more than ever before.

INSTRUCTION AT THE UNIVERSITY

There are ten students pursuing post graduate work in the college, six of whom will take the Master's degree in Agriculture at the end of the year. When we consider how recently the attempt has been made to train students in the profession of agriculture in the colleges, how difficult and discouraging were, of necessity, the first attempts, and how comparatively few graduates there have been, the present showing is most gratifying.

There are fifty-five students registered in the regular and special courses. The special course students frequently pass over to the regular course, either in their first or second year. The entrance requirements to the Course in Agriculture in and after 1898 will be as advanced as for the Course in Arts and Sciences. The full four years' course aims to give both—"A liberal and practical education." The special course of two years is designed to give a practical rather than a liberal education to students who cannot, on account of home duties, complete the full course.

The winter course of eleven weeks offers instruction in two somewhat different lines: one adheres closely to those branches of study and research which are directly related to the dairy industries of our country; the other aims to give the principles and practices which relate to general agriculture. Forty-four students joined the former course last winter and eighteen the latter course.

The special and winter course students receive nearly all of their instruction in the College of Agriculture; those in the four years' course receive about one half of their instruction in other Colleges of the University.

UNIVERSITY EXTENSION TEACHING

In addition to the students who are in actual attendance at the University, the College of Agriculture has enrolled under the head of "University Extension Work" more than five thousand of the pupils of the public schools, one thousand six hundred young farmers, and ten thousand public school teachers.

The pupils and farmers receive guidance and help by means of printed instructions as to the lines of study which it is thought best for them to pursue, and by leaflets largely on nature studies, directly or indirectly related to agriculture. From time to time question papers are sent to these pupils that their progress may be noted, and subjects which are not well understood explained.

Work is being carried on by means of these leaflets in the hands of the teachers, and by suitable bulletins published by this and other stations, and references to books which bear upon the subjects being studied. Ten thousand teachers have been furnished with full sets of leaflets on nature studies. Seven leaflets in all have been published, and three more are in course of preparation. These leaflets contain from six to ten pages each and are fully illustrated. Several of them have gone to the third and fourth edition.

Six teachers, selected on account of unusual fitness, have been employed to carry on the educational work throughout the State. In addition to these, special instructors are employed when required. The educational work carried on in addition to the instruction given at the University embraces all lines of agriculture, from the cultivation of flowers and fruits to the rearing of domestic animals, the construction of cheese and butter factories and like buildings, and the manufacture of butter and various kinds of cheese.

EXPERIMENTATION AND INVESTIGATION

In connection with the work of experimentation and original investigation carried on by the regular staff at the University, extended experiments are being prosecuted throughout the state by three experts, who give the larger part of their time to investigations, although they are sometimes called upon to give instruction. Prints have been prepared (see Tenth Annual Report of the Agricultural Experiment Station), to show graphically the location of two hundred three experiments with fertilizers, and more than five hundred experiments in sugar beet culture which are now being carried on. Some fifty experiments in strawberry and orchard culture are being conducted in the northern and western parts of the State.

PUBLICATIONS

During the year the college has issued eighteen bulletins, which contain four hundred eighty-six pages and two hundred ten illustrations. It has been necessary to publish a second edition of one bulletin issued last year, and three bulletins of the present year have gone to the second edition and one to the third edition. These extra issues were necessary to supply the demand, although fifteen thousand copies of each were originally printed. In addition to the publications already noted, numerous circulars and letters of information and instruction have also been issued.

APPROPRIATIONS

The Federal Government annually appropriates to the division of the college known as the Agricultural Experiment Station, thirteen thousand five hundred dollars. In 1894, the state supplemented this with an appropriation of eight thousand dollars to be expended in the Fifth Judicial Department (sixteen counties in the western part of the state), in horticultural investigation. In 1895 the state doubled the amount of the appropriation, and in 1896 a like appropriation of sixteen thousand dollars was made to be expended in horticultural investigations in the Fourth Judicial Department, embracing twenty-two counties in the western and northwestern parts of the state. In 1897 the state appropriated to the college twenty-five thousand dollars for the promotion of Agriculture throughout the entire state, to be expended* "in giving instruction by means of schools, lectures and other University Extension methods, or otherwise, and in conducting investigations and experiments: in discovering the diseases of plants and remedies therefor; in ascertaining the best methods of fertilization of fields, gardens and plantations; and best modes of tillage and farm management, and improvement of live stock; and in printing leaflets and disseminating agricultural knowledge by means of lectures or otherwise; and in preparing and printing for free distribution the results of such investigations and experiments, and for republishing such bulletins as may be useful in the furtherance of the work; and such other information as may be deemed desirable and profitable in promoting the agricultural interests of the state."

HISTORICAL RETROSPECT

It will be seen how rapidly the work of the college has been extended since 1873 when I took charge of the then Department of Agriculture, at which time there were but two students, small appropriations, a poor farm with few equipments, primitive and meagre illustrative appliances, and no provision for carrying on investigations or experiments, or funds for publishing the results of the investigations which were sometimes conducted by the instructing force during vacations.

The wise and liberal provisions which have been made by the University, the state, and the nation, make it possible for the college to carry on the ordinary work at the University and to employ an able corps of teachers and clerks, and to print and disseminate a vast amount of useful and valuable information. The employment of eight able teachers and investigators and a few special teachers for short periods of time, in addition to the resident Professors and Assistants, has made it possible for the college to reach directly and give instruction to large numbers of pupils and teachers in the public schools, while providing full instruction for the resident students without diminishing our efforts to instruct the farmers by means of bulletins and occasional lectures.

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*Chapter 128, Laws of 1897.

NEEDS

The special needs of the College of Agriculture at the present time are two. Sufficient and suitable rooms and offices for carrying on the work already undertaken should be provided at an early date. Classes are frequently crowded into rooms which are too small to seat the students. This over-crowding results in " villainous " air before the end of an hour. No opportunity is given for arranging illustrative material, since the class-rooms are frequently occupied continuously three to four hours. There is an imperative demand for a large building to house the College of Agriculture.

The farm has been encroached upon for building lots and other purposes during the last twenty years until there is insufficient land for carrying on operations sufficiently large to adequately illustrate mixed or general agriculture. An outlying farm should be purchased during the coming year.

Respectfully submitted,

I. P. ROBERTS,

Director of the College of Agriculture.

APPENDIX VI

REPORT OF THE DIRECTOR OF THE NEW YORK STATE VETERINARY COLLEGE

To the President of the University:

SIR :—I have the honor to report the first year of the New York State Veterinary College as a substantial success. The announcement of the opening was of necessity late, and the number of students who entered somewhat limited in consequence. The equipment, too, was at first incomplete, so that work had to be begun under difficulties. The earnestness and devotion of both professors and students, however, very effectually counterbalanced these temporary drawbacks, and an amount of work has been accomplished in all departments which is highly gratifying.

The students in the regular veterinary course numbered eleven, eight of whom were from the State of New York, one from New Jersey, one from Pennsylvania, and one from Nova Scotia. Students from the medical preparatory, agricultural, and other courses in the University who have taken work in some department of the Veterinary College were 71, while from the short winter course in Agriculture, 53 took my lectures.

Three veterinary students are candidates for graduation, and I am in receipt of enquiries from three separate institutions for competent men to teach veterinary science and to undertake research in the veterinary sanitary field.

ANATOMY

In the department of Anatomy Dr. Hopkins and his assistants have been most assiduous and successful in educational work, and important investigations have been made, notably in the correlation of anatomical peculiarities to the disease known as *poll evil*. Important anatomical additions have been made to the museum, and a valuable set of books presented to the University Library for the use of the department of Anatomy, has been placed on the shelves of the laboratory for students' use.

This department is still in much need of an apparatus for the preparation of osteological specimens and also of dissecting tables, the present supply being insufficient to meet the demands of a prospective large class. Other pressing needs are additional charts and models, two microscopes, a supply of hot water, and a cold storage room. The latter would demand an outlay of $1500. The other desiderata, which are even more pressing, would require about $500.

PHYSIOLOGY

The work of Dr. Fish was, at first, seriously hampered by the unfinished condition of his laboratory, but later this was counterbalanced by enthusiastic work. Important work was done by students in the specialty of digestive ferments and other normal secretions. A considerable modification of the course has been made for the coming year, and as further apparatus can be provided, this department will be made more and more valuable to the earnest student. One thousand dollars can be very profitably expended on books and apparatus for this department.

PHARMACOLOGY

The course in pharmacology has been availed of by a number of University students, in addition to those who are pursuing the regular veterinary course. The experience of the year has shown the necessity for a further course in both *materia medica* and practical pharmacy, which will accordingly be given in the next University year, together with a special course in therapeutics. An outlay of $1000 for additional equipment would render this important department considerably more effective.

Under the direction of the United States National Museum, Dr. Fish has in the course of the year made an important investigation and report on the brain of the fur-bearing seal. He has also made many valuable additions to the College Museum.

MICROSCOPY, HISTOLOGY, AND EMBRYOLOGY

In this department the equipment is excellent in every respect, and directed by the experience and skill of Professor Gage, admirably seconded by the ability and enthusiasm of Dr. Kingsbury, the work has been eminently successful. In the first term as many as forty-two students were engaged in microscopy, forty-five in histology, and eleven in research or thesis work. Of the students working in this department, seven were graduates, two instructors in the University, and twenty-one seniors. Six baccalaureate theses were prepared under Professor Gage's direction. In the field of research important results have been obtained, and two valuable papers embodying a part of these will be published in scientific journals at an early date. Many beautiful and valuable specimens have been prepared for museum and laboratory.

COMPARATIVE PATHOLOGY AND BACTERIOLOGY

This department also has the advantage of an admirable equipment and, with the skill and enthusiasm of Dr. Moore and his able assistant, Mr. Reed, the most gratifying results have been obtained. The number of students availing themselves of the department has been : for bacteriology nineteen, for pathology seventeen, and for meat inspection twelve. One senior has written his thesis in bacteriology under Dr. Moore's direction.

The instruction has been of an intensely practical kind, each student in the bacteriological laboratory, for example, working out for himself the biological characters of the more important pathogenic bacteria by the aid of the large thermostat and the various methods of culture. He thus gains a practical working knowledge of the technique, of the making of culture media and cultures, and of the microscopic and chemical results. His scientific acquaintance with the pathology of a disease is thus rendered thorough and accurate. Material improvements are arranged for the coming year for both class-room and laboratory instruction, so that we can confidently look for still better results in the future.

Mallein and Tuberculin. The manufacture of these agents, which have become practically indispensable to the veterinary sanitarian, has been successfully begun, and this department can now supply both, to State officials or other persons qualified to make use of them in the sanitary field.

Research. The department has instituted investigation along certain lines with the view of extending the knowledge of the diseases of animals and their restriction. Among these may be named contagious pneumonia in horses, contagious abortion in cows, infectious broncho-pneumonia in cattle, swine plague, and hog cholera. Fruitful results in various directions have already been reached in these diseases, and still more important conclusions are practically in sight.

In this same line considerable work has been done by this department for the Commissioner of Agriculture, especially in the matter of swine diseases, visits having been made to many different parts of the State, and when necessary the nature of the disease has been demonstrated by subsequent work upon its products in the bacteriological laboratory. Work has been done in the same line for two great State institutions and for private stock owners. In this way the real infectious fevers have been conclusively differentiated from the purely enzoötic outbreaks of disease which are habitually confounded with the actual plagues.

One important feature of the work for the state was the testing of a serum prepared by the Bureau of Animal Industry as a therapeutic agent in swine plague. Though it failed to prove effective in every case, the results obtained were encouraging.

Some experimental investigations into the bacteriology of milk have been made for Mr. Howard, one of the State milk inspectors. With a continuance or increase of this outside work an additional assistant will become necessary.

Museum. There has been prepared a number of specimens of pathological conditions and of cultures of different pathogenic bacteria, showing in a striking way the distinctive biological characters of each. It is proposed to add largely to these during the summer vacation.

VETERINARY SURGERY

The course in this department, carried on with enthusiasm and skill by Dr. Williams, has fully met our expectation and gives assurance of increasingly valuable results in the future. The one question of the amount of clinical material available, which had been advanced as an objection to a veterinary college at Cornell, has been conclusively decided in our favor. Up to date over 200 surgical operations have been performed upon all genera of farm animals from the chicken to the horse. Not only has the material proved ample, but its great variety has given us a decided preeminence among veterinary colleges. This clinic has been availed of in such a way as to render it peculiarly advantageous to the student, each of the second and third year men having performed from thirty to forty operations under the immediate supervision of the professor. The educated touch, the manual dexterity, and confidence of skill which are produced in this way can never be attained by lectures and the witnessing of operations performed by others. Neither can they be secured by operations upon the subjects for dissection.

In the equipment of this department some very desirable apparatus was omitted for lack of means, and it is to be hoped that the next legislature will see the wisdom of rounding out the establishment by furnishing further facilities. Stocks, operating table, and sterilizing apparatus are very desirable, and an ambulance and some additional instruments would greatly facilitate the work. A sum of $1500 would accomplish much in this direction.

VETERINARY MEDICINE AND SANITARY SCIENCE

In this department the experience of the year has been eminently satisfactory. Students have worked earnestly and faithfully, and the instruction in class-room and clinic has borne excellent fruit. Beside the regular veterinary students, men from the medical preparatory course availed of this subject. Five students have taken their baccalaureate theses under my direction, three of them being in the regular veterinary course. Two of the latter based their thesis work on original investigations, which have contributed materially to the advancement of veterinary knowledge and will be published.

Clinical facilities in medicine have been availed of from all the different genera of domestic animals, and special research has been made in a number of diseases, including contagious pneumonia, contagious abortion, canine distemper, fatty degenerations in sheep, hereditary ailments in swine, glanders, etc.

For clinical purposes a special building for use in severe weather, a dark chamber for eye examinations, and a further extension of the isolation ward are very desirable. The latter has been repeatedly strained to its utmost capacity, so that the keeping of animals for experiment and investigation became impossible. The ambulance is even more desirable for medical than for surgical patients. For such additions, and for apparatus, a sum of $3000 to $4000 could be profitably expended.

It should be added that the first volume of a text-book in veterinary medicine has been published, a second volume is nearly ready for the press, and the third will follow at an early date.

SEMINARY FOR RESEARCH AND THESIS WORK

Professor Gage was prime mover in this department, which has proved of great value to students engaged in special work. Suggestions and guidance in the line of work, criticism of results, and training in the best methods of presenting such results, served at once to benefit the student and enhance the value of his investigation.

CURRENT LITERATURE

To keep the College in touch with the rapidly advancing science of medicine, it needs an additional supply of current literature, the yearly cost of which will be in the neighborhood of $200.

Respectfully submitted,

JAMES LAW,

Director of the New York State Veterinary College.

APPENDIX VII

REPORT OF THE PROFESSOR IN CHARGE OF THE COLLEGE OF ARCHITECTURE

To the President of the University:

SIR :—The work in the College of Architecture under the new Faculty has hardly been going on for a long enough period to enable me to prepare a satisfactory report; but there are a number of important things that may be said in connection with the policy of the Faculty of Architecture and of the changes which have been made this year, which may be of sufficient interest to justify their publication.

A graduate from an architectural school learns very soon after leaving his alma mater that architectural design is the essence of all that he had really wished to learn. That curriculum which does not lay sufficient stress upon this department in a college of architecture is lamentably weak. Our first effort has been to develop and improve the work in design to such an extent that all other subjects except pure mathematics and, possibly, the languages will be so taught as to bear directly upon the work in design. Professor Van Pelt, who is mentioned on another page of this Report, has been secured to take charge of this work after having spent nine years of study in the foremost school of architecture in the world,—the Ecole des Beaux Arts. Professor Van Pelt's preparation has been of such a broad nature and has been gained in such a thoroughly architectural atmosphere that I am satisfied that we could have obtained no one more fitting for the position. He has received some honors in the Ecole des Beaux Arts which no other Americans have ever gained, the last and most important being the title of Lauriat de la Société des Architectes Diplomés.

Last spring, through an appropriation voted by the Executive Committee, Professor Van Pelt purchased, in Paris, for the College of Architecture a number of drawings, which will be without doubt one of the greatest additions that we could have made to the material equipment. They consist of five complete sets of drawings in architectural design, seven twelve-hour architectural sketches, and three decorative designs, all made by some of the foremost students of the French school. All of these drawings but one received medals, and that one was denied a medal because of a technicality. With regard to some of these drawings, I do not believe there are any to be found in this country which show a higher standard of workmanship, and they are a constant source of inspiration to the Faculty of Architecture as well as to the students themselves.

In direct connection with the work in design, and preparatory thereto, is the department of freehand drawing, now in the hands of an instructor of ability, Mr. Olaf M. Brauner, who succeeded during the past year in developing work of a high standard of excellence, in spite of the fact that the quarters where the students worked were of a very cramped and meagre character. It is a pleasure to be able to announce that, owing to the kindly cooperation of the department of Greek, the sophomores in architecture will hereafter be able to study their work in freehand drawing in the Museum of Casts, an environment full of inspiration and help.

The work in design has been extended so that nearly twice the amount of time will be given to that subject that has been given in the past.

The Faculty realizes from its own experience that competition and emulation in work of this character are the greatest means of producing good results. Acting upon this view, they have decided to enter the intercollegiate competitions which are held annually by the Society of Beaux Arts Architects in New York. These competitions occur three times during the year. The honors for which men work consist of gold and silver medals and first, second, and third mentions. It is thought that by thus introducing work of the nature of intercollegiate contests the architects will have an opportunity of contributing to the honor of Cornell in work which will bear directly upon their future.

In order that most of the studies carried on in this College may be made to bear directly upon the work in design the Faculty will constitute itself a jury to pass upon the merits of the compositions. Thus, while Professor Van Pelt and I will criticise in detail the general composition, Professor Martin will study the construction, Mr. Higby the work in projective drawing, shades and shadows, etc., and Mr. Brauner will pass upon the quality of drawing, principally in matters of ornamental detail. In this way, each member of the Faculty not only is daily interested in that branch of the work which is conceded by all architects to be the most important, but is also enabled to judge for himself whether or not his method of teaching is carried on in a proper manner to produce the desired results.

Our Faculty are all enthusiastic, and are men who prefer to work hard; but there seems to be at present a need of one more member in order that we shall not run the risk of carrying too much work individually and thus weaken the quality of the instruction given to individual cases.

It is with great satisfaction that I call attention to the prize of $50 which you, Mr. President, have so kindly offered to our College as an award in competitive design. Also, it is the wish of the Faculty, if funds for the purpose can be obtained, to award medals for the most meritorious work in the departments of design and freehand drawing. It has been my own experience that men will work doubly hard if their personal enthusiasm be intensified by the prospect of winning such honors.

In considering the needs of the College of Architecture, many things come to mind the possession of which will enable us to place our course prominently in the list of schools of architecture. A certain mediocre standard could be kept up without adding to our present facilities; but to take a foremost position we shall require several additions of considerable magnitude. The first in importance is the need of a traveling scholarship of a more liberal nature than any now possessed by other institutions. Foreign study is to-day so generally enjoyed among students of architecture that competition in consequence is all the more strong for those who graduate and enter the atmosphere made by men who have had superior advantages.

Our second need is a building for the College of Architecture, as it is difficult to instruct our students, giving them a proper understanding of their art, in a building where the space is so cramped as it is with us. In quarters inartistic and aesthetically cold it is impossible to arouse the enthusiasm necessary for developing strong work. Among minor needs may be mentioned drawings, photographs, many more architectural models than we now possess, and a special room for the study of photographs.

Even better than an Architectural College would be a Fine Arts Building where architects could study their profession, side by side with embryo painters and sculptors. The inspiration which such an atmosphere would give would certainly be of lasting benefit to any student, and would help Cornell to justify her claim of giving instruction to any person in any subject.

I feel confident that we shall show good results, for the students in the main are made up of hard working men who realize for what purpose they have come to Cornell, and I have strong hopes that we may have the good fortune in the near future to be so liberally helped that we shall not be handicapped by lack of materials and space.

Respectfully submitted,

ALEXANDER BUEL TROWBRIDGE,

Professor in Charge of the College of Architecture.

APPENDIX VIII

REPORT OF THE DIRECTOR OF THE COLLEGE OF CIVIL ENGINEERING

To the President of the University:

SIR :—As usual, at the termination of each scholastic year, I have the honor to present for your consideration the following report upon the condition of this College.

In another communication will be found in detail the distribution of our work, with notes upon the present needs of this College and what is deemed desirable to increase its further usefulness.

The year just closed has been remarkable in various ways. The reputation of our graduates (as shown by the census of their positions submitted to you last year) is the main reason for the constantly increasing influx of students, even though the requirements for admission are higher than the highest given in "Class A," as published by the committee on entrance requirements of the Society for the Promotion of Engineering Education. This has emboldened me to increase still further those requirements for the coming year; and if this may tend to reduce our numbers, it will furnish better selected material and more matured students; for the undersigned believes that the object of the University is the training of leaders, and not to provide mediocrities with the means of obtaining a livelihood.

Our present freshman class is the largest in the history of this College; and the benefit produced by the increased requirements for admission is made apparent by the notable improvement in the personal and intellectual appearance of its members.

From the records of this College, I find that the average age of our classes at the end of the spring term, at which time all undesirable and heterogeneous material has been weeded out, was as follows in June, 1897:

CLASS.	Average date of birth.	Average age of class.	Difference between classes.
Freshmen	1877.1	20.5	----
Sophomores	1876.4	21.2	0.7
Juniors	1874.6	23.0	1.8
Seniors	1873.8	23.8	0.8

The radical change of government which went into effect this year, is considered by this College as the beginning of a new era of University administration, from which incalculable benefits will be derived by all the Colleges. Never before has there been so much industry observed and efficiency obtained from the work of our large body of students. Under the new regime, the students' needs have been cared for at once; it has been possible to aid them at every stage of their progress, to apply remedies swiftly, preventing discouragements and abuses, and to obtain or give needed information without loss of time; important educational improvements have been effected after intelligent discussion, within the

College, with unanimity of action, celerity of application and useful results. There are still some rough points to be smoothed over by our growing experience, as must be the case with any new system; but I am sure that every desirable adjustment will be reached in due time, and the University will reap the full benefit of having its professional schools under the care of responsible experts.

A subject of congratulation within and without the University is the realization of the great hydraulic laboratory of this College. I am in receipt of many letters from engineers, and even from several of the foreign embassies at Washington, which prove that there will be no lack of interest and applications to use this laboratory and make it a powerful contributor to the progress of hydraulic and sanitary science. The President of the American Society of Civil Engineers, at the annual meeting held at Quebec last June, congratulated this University for its foresight, not less than for its generosity, in constructing this great laboratory and inviting the cooperation of members of that Society to profit by the advantages it offers.

It may be interesting to give here an idea of the programme of work being elaborated, in connection with the facilities offered by the laboratory granted to this College, which, by the munificence of the Trustees, has been put in possession of the greatest hydraulic laboratory in the world.

The work being planned is as follows:

(1) Studies upon the dragging and suspending power of running water at various stages of its saturation with sediment.

(2) The effect of transverse, longitudinal and submerged dams, under standard conditions, and under conditions modified at will by disturbing influences, covering many varieties of complications.

(3) Study upon the corrections to be made in the bed of streams to give them the most suitable and stable longitudinal profile.

(4) Stndy upon the mechanics of such rivers as build their minor beds higher than the major bed. In this connection Major Leach's recent paper on "What the Mississippi is and what it needs" opens a promising field for investigation.

(5) Study of "Littoral Cordon Formation," and of channels, bars and deltas, and of the deposition of sediment from rivers entering into quiescent waters, and against high tides.

(6) Study of the conditions affecting the length of the straight portions and the degree of curvature of the bends of natural and artificial water courses, looking to secure permanence of channels and of depths of water.

(7) Study upon the delivery and conditions of the watershed of the stream and the tributaries which feed the canal, with reference to the amount and kinds of suspended matter carried by floods, the interrelations of the deliveries of the tributary floods, and such studies as may prove useful for determining the coefficients of flood volume, length of spillways, and height of floods over them, so as to perfect the formulæ for the de-

livery of watersheds, if this be possible. The watershed of this canal covers 117 square miles of surface which will be most carefully surveyed topographically, geologically, and hydrologically.

(8) Experiments upon the rating of current meters; the motion of water in open channels, in pipes, under ice, over weirs; and under variable conditions of velocity, material of the conduits, condition of the surfaces, contractions, and grades.

(9) Determination of the resistance to the motion of boats in canals in reference to their respective cross-sections, effect of waves, etc., etc.

(10) Experiments on water jets, which embrace a broad field for new work upon the forms of water wheel buckets, ratios of areas and forms of propellers, including water jet scouring and propulsion.

(11) Experiments on the tests, design, construction and efficiency of water and other motors, including water meters.

(12) Effects of the form and condition of the surface of vessels upon their speed, motive power required, and ratios of velocities and resistances.

(13) The uses of this laboratory are not restricted simply to the study of hydraulic questions. For example: on the sanitary side, the relations that should exist between the grade of a sewer, its size, and the volume of flush water required to produce a given effect, are almost entirely unknown. The work of S. H. Adams, just published, does not supply the needs of hydraulicians with the required generality that the equipment of this laboratory will furnish.

Many additional investigations in reference to Sanitary Engineering are being studied; but to detail them seems unnecessary at present. They bear upon a better scientific foundation for engineering biology; upon the preservation of standards of purity in water supplies; and upon proofs to be furnished in order to improve the personnel and widen the powers of our Boards of Health, whose labors, with very few exceptions, have proved most disappointing throughout the entire country: in fact, this laboratory may be made to contribute to develop the science of "Public Medicine," which is as yet an unoccupied field urgently demanding its rights as a social necessity.

The great comparator constructed by the College has been completed, and we are now in a position to determine the coefficients of expansion of the material of construction, and carry on several investigations in the higher realms of physics as applied to the purposes of the engineer. Also the half seconds pendulums for gravimetric and other purposes, which have been under way for the past two or three years, are nearly completed.

It gives me much satisfaction to state that the atelier of our special mechanician continues to be a source of economy as to the purchase of instruments of high precision and of special designs, as well as in certain kinds of repairs or improvements to the collections of the museums of this College.

The additions to our teaching facilities by gifts in the shape of instruments, books, drawings, etc., have averaged a little over one thousand dollars per year since 1890, since which date a separate account has been kept for this kind of gifts. Other equipment purchased from the regular College appropriations, for each year, are given in the annual inventory of the property under my care, in such a manner as to give a complete account of the growth and the fulness of value of our splendid equipment.

The inconveniences of lack of room in our present quarters have been intensified during the present year, owing to the increased numbers of students. I would recommend, not that this entire building be placed at my disposal; but that a new and suitable structure be erected for this College, as detailed in a former communication.

Observations of the weather were commenced in this College in 1874, and since 1879 very complete records of the principal meteorological elements have been kept. These records are constantly consulted by students of this College, and are also found indispensable by other technical departments of the University; whilst the classes in physical geography inspect our observatory, methods of work, etc., each term, and students especially interested in meteorology find an opportunity to obtain a practical working knowledge of the subject.

Four trained observers and experts in meteorology, none of whom receive salaries from the University, have endeavored to give all possible aid and instruction in such cases.

After persistent effort, the aid of the Legislature was obtained in 1889 toward the establishment of a State Meteorological Bureau. One hundred and thirty stations now report to our office a statement of the weather conditions over the State, throughout the year. Thus the bureau, while primarily serving the interests of the State at large, furnishes precisely the data most needed for the study of climate, water supply, and an important class of sanitary problems.

The Central Office, at Cornell University, is also the distributing point for a system of forecast display stations, embracing more than seven hundred towns and villages in New York State; whilst our crop bulletins and monthly reports, dating from the same source, are widely distributed over every state in the Union. The records of this bureau are in constant demand by a large number of corporations, courts of justice and private persons in the United States and abroad. Some idea of the activity of this bureau may be obtained from the fact that about thirty-five thousand pieces of mail matter are forwarded from this office each year, in addition to over two hundred thousand cards per year, mailed to distributing centers.

The University clock has been regulated and kept on 75th meridian time, as usual.

During the entire year, only forty-seven leaves of absence have been granted, as follows: to vote at home, eighteen; on account of important business, thirteen; severe illness or death in the family, eight; athletics, three; glee club, three; family weddings, one; fraternity convention, one. With the exception of two cases of protracted illness, the total number of days of absence was one hundred and twelve for the entire year.

Two students have been dismissed by the College for sufficient reason.

During the three terms just closed, this College has given 1158 hours of instruction to its own students, and 1136 hours of instruction to students of other colleges.

The teaching force of this College, exclusive of professors in charge of non-professional subjects, consists of three full professors, one associate professor, one assistant professor, five instructors, and one skilled mechanician.

Respectfully submitted,

E. A. FUERTES,

Director of the College of Civil Engineering.

APPENDIX IX

REPORT OF THE DIRECTOR OF THE SIBLEY COLLEGE OF MECHANICAL ENGINEERING AND MECHANIC ARTS

To the President of the University:

SIR :—The Director of Sibley College, now the Dean of its Faculty, submits the following statement relative to the work of that college as progressing during the college year 1896–97, as directed by the Statutes of the University, and as customary during the twelve years of its existence in the present form.

The advances effected recently in the administration and operation of the College have been quite as marked and satisfactory as in earlier years, though in a less visible direction in some respects. No enlargement of the accommodations in any department has occurred—a somewhat novel fact in its history—and no very striking extension of its equipment has taken place. The grand advance to be noted, and one which, it is anticipated, will continue for an indefinite period, under favorable circumstances, is that to be observed in the character and extent of the work accomplished by its students. The present graduating class is expected to be the largest ever issuing from this, or any other, school of mechanical engineering in our country, and its quality is hardly less notable. The number of candidates for graduation is, to-day, one hundred and thirty-two proposing to take the first, and six taking the second, degree; two others taking the degree of D.Sc., a total of one hundred and forty.

The new system of conduct of the affairs of the College, resulting from the formal division of the University and its Faculty into several independent groups of departments and of men, bringing the whole institution into a shape more in accordance with the university idea and giving it a more complete and systematic form, has, in the case of Sibley College, worked smoothly and efficiently. The work of the year has gone on quietly and without the slightest friction, and no objections have been raised to either the method or its operation. No embarrassing questions relative to the somewhat uncertain frontier line between the functions of the Faculty and those of the Director have arisen, and, in fact, work, the main function of the college, faculty and students alike, goes on very much as before and the Director's original organization proves perfectly adaptable to the new scheme.

The increased requirements for admission, under which the College is now working, continue to give evidence of the wisdom of their adoption and the entering classes continue to grow in maturity and strength. As a body, they are reported in all departments to be in every respect admirable in conduct and excellent in scholarship. The change has resulted, necessarily, in modifying somewhat the list of graduate students. Those coming from schools which were formerly rated as of maximum standing and were received as graduate students now, in many, perhaps most, cases, find their place in the senior class and the large numbers, proportionally, formerly coming from the average technical institution and entering as seniors with us now find themselves best suited when becoming juniors.

Further, the register of students is now arranged with these classes of students placed in two lists, the one composed of those who thus enter the undergraduate courses or take up an optional list of courses, usually becoming candidates for the baccalaureate degree, and the other list composed of students, usually graduates of our own departments or alumni of other institutions who have been engaged in teaching or professional work for some time after graduation, who are candidates for the master's degree or for a doctor's diploma. Thus it happens that we have twenty-seven graduate students candidates for M.E., and twelve candidates for M.M.E.; while three are not candidates for any degree. There are also two of our own alumni who have become candidates for the degree of D.Sc. There are, besides, ten special students, taking work specially demanded by them for their own peculiar purposes.

In addition to the regular students of the College, as above, the last session of the Summer School was attended, in departments related to Sibley College, by fourteen students. The following is the census for the year with the figures for earlier years, since the organization of Sibley College on the installation of the Director, in 1885:—

SIBLEY COLLEGE, 1896–97 ; CENSUS

Graduate Students—Candidates for M.E.	27
Candidates for M.M.E.	12
Candidates for no degree	3
Total	42
Special Students	10
Undergraduates	439
Total	491

UNDERGRADUATE LISTS 1885–97

	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97
Enrolled	63	106	168	220	283	369	428	501	546	556	485	493	466
Graduated		*5	19	22	32	54	52	90	93	81	90	110	125†

Some of these candidates will presumably be unable to fully complete all requirements for graduation and such cases will fall into the list for 1898 ; but the number actually taking diplomas will not be thus greatly diminished, and the class of '97 will in this respect prove the "banner class" to date.

The total registration in Sibley College, at the date of the last edition of the University Register, was, in the undergraduate department, 466 to which number some addition has since been made. The list of special and of graduate students brings the figure up to about 500. Our classes, at graduation, have, of late, been about fifty per cent larger than those of the largest of our competitors in this field, and about three times as large as the largest of the independent schools, in this department, in engineering.

The courses of instruction have come to be also exceptionally high as to quality and remarkable as to extent. Exacting preparation for immediate entrance upon the study of the higher mathematics, on admission to the College, and securing an extensive and very strong course in applied mechanics in the second year, the student enters upon his work in the laboratories, requiring peculiarly heavy work in applied mathematics, fully equipped for that work, and often finds it practicable, in his senior year, or even occasionally before, to enter upon some line of experimental investigation and original research for which his special talent particularly adapts him. Much valuable work has been thus accomplished by undergraduates ; while it constitutes the usual and largely the regular work of the graduate student in either branch of engineering.

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*Until 1886, no students in electrical engineering were formally registered in Sibley College.

†Estimated.

The class of '97 is the last of the series entering before the institution of the present exceptionally high requirements, and the last, at the time at least, comparable with the graduates of other institutions of this kind. The class of '98 and those succeeding it will stand, practically, a year higher and be of equivalent rank with a graduate student of one year's standing under the old system and as turned out of high grade professional schools of this kind. The great advantages of this higher standard of entrance and work are being made evident daily by the character both of the men and of the work under the new regime. It is only the very best of the great mass of candidates for admission that can be brought into our lower classes, and their maturity and high character, as well as their exceptional talents and improved preparation, afford gratifying confirmation of the wisdom of the decision to place Sibley College above the highest existing standard of the schools of its class. Other schools are now following as rapidly as their circumstances permit, and thus the influence of the University and of Sibley College upon the profession of engineering is becoming broadened and strengthened.

Reports from our graduates, in every field of their professional work, and especially in their very frequent and widely extended employment as professors and instructors in technical departments of colleges and schools, indicate that they are doing their full share, both of the business of the country and in the promotion of the best and highest phases of professional practice. They largely direct the professional instruction of the young engineers of the country.

Twelve of these representatives of the University and of Sibley College are holding commissions in the United States Revenue Service, in the engineer corps, and of these young men the Engineer-in-Chief writes the Director of Sibley College: "I am pleased to state that they have given complete satisfaction. They maintain a high standard of excellence." More are expected to enter at the coming examinations. Nearly one half of all entering during the period of service of the present able and discreet Engineer-in-Chief are our graduates, although it was only very recently that it became known that this opportunity was open to them. In several of the state universities, the engineering work is practically directed by our men, and our alumni are teaching in every state in the Union.

The equipment of the institution is still growing in extent and value, and especially in its value for purposes of research in engineering and in the various departments of applied science. It now includes about four hundred horse-power in many steam-engines, large and small, about two hundred and fifty horse-power in water-motors, twenty-five in gas and oil and air engines, nearly one thousand horse-power of steam-boilers available to purposes of instruction and experiment, inclusive of the great heating system of the University, nearly one million pounds capacity of testing machines for iron and steel, etc., the individual machines, large and small, numbering fifteen, and numerous electrical and other and minor apparatus. This equipment, extensive as it is, however, is by no means fully equal to the needs of our large classes; were it practicable, very large extensions, in many lines, could be most profitably made. In addition to these remarkably extensive and valuable collections, the equipment includes other hardly less important aggregations of apparatus, in the departments of Mechanic Arts and Machine Design, in the museum, etc.; while the resources of the College are enlarged in a most practical and helpful manner by taking advantage of the facilities for extended experiment and observation offered us by the local Street Railway Company, and by the neighboring factories, mills, steam railways, and electric light companies. Our students, in fact, go as far as Boston on the one hand, and Washington on the other, to Buffalo and to Rochester, Elmira and Utica, to conduct experimental investigations of mutual interest and value to proprietors and students alike. Scores of students take advantage of such opportunities. Manufacturers and managers of establishments are now frequently demanding assistance in such experimental investigations and in trials of engines and tests of boilers, etc., and this is becoming a centre of most important and interesting work of this character. This fortunate circumstance is a means of affording us exceptional and extensive opportunities to promote scientific and technical research in professional fields, with great advantage to our students, to the University and the College, and to science and the world.

Graduate students, of whom a number have usually been able to pay special attention to such work, often aid the members of the Faculty of the College in investigations in applied science. We have, this year, eight of this class, six candidates for the Master's degree in engineering, and two for that of D.Sc., who, as it happens, have all taken part in such work. The experimental studies of Professor Durand on the forms and economical proportions of screw-propellers for steam vessels, of Professor Carpenter on steam-engine and boiler economies, on strength of materials, etc., those of Professor Ryan on the newer forms of dynamo-electric machinery, including his own inventions, which are of serious importance, those of Professor Barr on relation to the proportions of steam-engines of various classes, as developed by experience, numerous investigations by other members of the Faculty and by graduate students, and even, often, undergraduates, seem likely to constitute ultimately important subjects of record, in the transactions of engineering societies and in scientific journals, abroad as well as at home.* The report of the President will give an idea of the nature and extent of this university extension system, and of the success attained in the endeavor to teach a profession, and to contribute in this special field, to the sum of human knowledge. The list of books written and of published papers there presented is a measure of the extent and value of this division of our work.

A review of the year gives little other matter for special remark. The work has gone on smoothly and happily, both within the College and in the University where other departments have given us their helpful and invaluable aid. No changes of the personnel have occurred and it is hoped that none may soon occur. Growth in numbers continues as rapid as, under the circumstances and until large accessions to our capital and income accounts can be secured, is healthful. Improvement in the strength and value of the courses is continuous and satisfactorily rapid. Our needs are still great and numerous, and our opportunities for extending and broadening and advancing our work are without parallel, here or elsewhere.

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* From one fifth to one third of the papers of the Am. Soc. M. E., of late years, have been contributed from Sibley College. We are also now supplying a large proportion of its new members.

Probably the most impressive aspect of the situation, as respects Sibley College, is seen in the extraordinary opportunities now and here presented for the promotion of those great interests upon which are always and necessarily based the growth of a nation, in wealth and comfort. With foundations already laid, broad and deep, it is here easy to build up new schools in which each shall find extensive lines of instruction provided by existing organized departments. With suitable provision of capital and an assured income, new schools of railway machine-design, of all the trades, of spinning and weaving and designing, and of the machinery of mining, with such assistance as any one of many of the friends of Cornell University, and of the education of the people for the work of the people, might furnish, for one or all, would prove of inestimable advantage to the state and the country. Fellowships and scholarships are always immensely helpful. Each of these foundations would make for its founder an imperishable name, while affording unceasing advantage to the people. The foundation, even, of a single establishment within a department of Sibley College—as, for example, a "Laboratory of Mechanical Science dedicated to the promotion of the Industrial Arts through Research"—with its professorial chair and a suitable equipment in buildings and apparatus, would have an importance, and would do a work, which only one who has seen and realized the extent and value of the work already done with limited time, funds, and facilities, by our existing departments, can appreciate. Here are unexampled opportunities for investments.

It is in this direction that our hopes now lie.

Respectfully submitted,

R. H. THURSTON,

Director of the Sibley College of Mechanical Engineering and Mechanic Arts.

APPENDIX X

REPORT OF THE REGISTRAR

To the President of the University:

SIR:—I have the honor to submit herewith my first annual report as Registrar of the University.

The reorganization of the University into separate colleges and faculties has made some changes in the work of this office. The work has been increased somewhat but in the main the functions have remained the same as last year.

ADMISSION TO ADVANCED STANDING

The credentials of students entering the Academic Department to advanced standing in September, 1897, have been adjusted by the office, while the credentials of those entering the various colleges have been referred to the faculty concerned.

ADMISSION ON CERTIFICATE

The Registrar is secretary of the University Faculty Committee on admission by certificate and also has charge of the credentials of those entering by Regents' Diplomas and by examinations.

During the last six years the number of applicants admitted by certificate, by Regents' Diplomas, and by examinations, are as follows:

	1891–92	92–93	93–94	94–95	95–96	96–97
Certificate	171	195	209	156	164	202
Regents	118	120	125	118	119	131
Examination	57	63	55	23	28	28
	346	378	389	297	311	361

The discrepancy in numbers in the freshman class, if compared with those given in the Register, is due to students being registered back and to students admitted from colleges and universities partly to advanced standing.

It should be noted that the number entering entirely by examination is becoming smaller. The preparatory schools are now better acquainted with our entrance requirements. The failure of several students to pass the entrance examinations before completing the high school course has influenced others to complete their course in school and enter the University by certificate.

STUDENTS

The following table gives the number of students in the various courses since 1891:

	1891-92	1892-93	1893-94	1894-95	1895-96	1896-97
Arts	142	141	138	133	146	170
Philosophy	100	110	121	136	153	155
Science	82	89	89	115	144	159
Letters	94	82	85	65	50	27
Law	122	176	197	191	207	239
Civil Engineering	139	129	116	122	121	150
Mechanical Engineering	251	295	239	212	201	230
Electrical Engineering	250	260	332	289	295	243
Architecture	68	78	97	76	67	51
Agriculture (4 year course)	22	22	25	24	30	34
Veterinary	--	--	--	--	--	11
Medical Preparatory	12	11	5	6	4	8
Optional and Special	122	137	126	132	139	170
Graduate Department	177	170	231	188	145	161
Total in University	1538	1700	1801	1689	1702	1808

The short winter course in Agriculture was attended by 60 students; the general course summer school, 1897, by 171 students; the summer school of Law by 23 students.

RESIDENCE

The following table gives the residence of students entering the University, 1896-97:

	New York State	U. S. excepting N. Y.	Outside U. S.	Per cent. from N. Y.	Per cent. from U. S. exc. N. Y.	Per cent. Foreigners.
General Courses — (Arts., Phil., Sci., Letters)	117	46	--------	71.78	28.22	--------
Agriculture	6	3	1	60.00	30.00	10.00
Architecture	6	9	--------	40.00	60.00	--------
Civil Eng.	43	26	1	61.43	37.14	1.43
Mech. Eng.	36	44	1	44.44	54.32	1.24
Electrical Eng.	30	32	3	46.15	49.23	4.62
Medical Prep.	5	2	--------	71.43	28.57	--------
Veterinary	8	1	--------	88.89	11.11	--------
Optional	7	12	--------	36.84	63.16	--------
Special	31	47	4	37.80	57.32	4.88
Law	83	26	2	74.78	23.42	1.80
Total Undergraduates	372	248	12	58.86	39.24	1.90
Graduates	14	25	9	29.17	52.08	18.75

TABLE SHOWING THE NUMBER AND PERCENTAGE OF THE UNDERGRADUATE STUDENTS ENTERING CORNELL IN 1896-97 WHO CAME FROM PUBLIC AND PRIVATE SCHOOLS,[1] ALSO THE NUMBER AND PERCENTAGE WHO ENTERED BY EACH OF THE VARIOUS METHODS

ENTERING FROM SCHOOLS	Number		Percentage		METHOD OF ENTRANCE—NUMBER						METHOD OF ENTRANCE—PERCENTAGE					
	From Public Schools	From Private Schools	From Public Schools	From Private Schools	On Regents' Diploma	On School Certificate	By Examination	On College Certificate[2]	On Recommendation as Specials	Students entering the College of Law, excepting those from colleges	On Regents' Diploma	On School Certificate	By Examination	On College Certificate	On Recommendation as Specials	Students entering the College of Law, exceptiug those from colleges
In New York State -------	296	77	79.36	20.64	131	100	17	25	30	75	34.65	26.45	4.50	6.61	7.94	19.84
In U. S. excepting New York	480	69	72.28	27.72	------	101	11	79	37	17	------	41.23	4.49	32.24	15.10	6.94
Outside U. S. --	10	------	100.00	------	------	1	------	6	2	------	------	11.11	------	66.67	22.22	------
Total -------	486	146	76.90	23.10	131	202	28	110	69	92	20.74	31.96	4.43	17.40	10.91	14.56

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[1] The distinction between public and private schools is necessarily roughly drawn. Colleges are all classed as public, though in many cases they are quasi-private.

[2] All students whether Special or Law are included if they come from a college.

PREPARATORY SCHOOLS, AND METHOD OF ADMISSION OF STUDENTS ENTERING THE UNIVERSITY IN 1896–97

A comparison of the preceding table with that for 1895–96 will show a considerable gain from private schools, while percentages for the different methods have not materially changed. It should be noted that the methods of admission on certificate and on Regents' Diploma are quite similar. The one requires a diploma from the school and the other a diploma from the University of the State of New York.

AGE

The report of the President for 1895–96 gave the average age of freshmen entering during the year along with data showing the number and age of those entering the different courses. The table this year has been prepared to show not only these points but also the median age.

The median age is the middle point among the ages of the group for which it stands. If the median age of the women in Arts is 19 years, it means that of those not aged 19, one-half are below and one-half above that age. In seeking for the age that is most typical of a group, the median age seems to meet the requirements better than the average age, which is obtained by summing up all the ages of the group and dividing the sum by the number of students in the group. Particularly in small groups the average is likely to be entirely misleading, as two or three individuals of an abnormally high age are likely to make the average misrepresentative of the group. The method by which the median age is obtained gives equal weight to an individual aged fifty and to one of sixteen years. The important thing is to locate the age which divides the group into two equal parts. The process is a simple one. When the individuals or units in a group are arranged in a progressive series, the middle point or median age is found by beginning at either end of the series and counting off one-half the units in the group.

A striking example of the different results obtained by applying the two methods to the same group is furnished by the women special students entering in 1896–97. There were only 28 such students. The average age was twenty-seven years, ten and one-third months; the median age was only twenty-five years, one month, a difference of two and three-fourths years. There happened to be a few women specials of relatively high age, and these, when the average age was struck, distorted the whole group, making the average an unfair representation.

Comparison of the tables for 1895–96 and 1896–97 shows that in the small groups the changes are unimportant, the variations being such as would naturally occur owing to the small number of units in the groups. In the larger groups the most striking changes are those affecting the women in the general courses, the mechanical engineers, and the men in law. In all three of these groups the age was decidedly lower for 1896-97 than for the previous year, and this is true whether the average age or median age is made the basis of comparison.

COMPARISON OF THE AGES OF FRESHMEN AT ENTRANCE FOR THE YEARS 1895–96 AND 1896–97

COURSES		Number Admit'd		MEDIAN AGE				AVERAGE AGE			
				1895–96		1896–97		1895–96		1896–97	
		1895–96	1896–97	Years	Months	Years	Months	Years	Months	Years	Months
Totals		548	632	19	11	19	8	20	8 2/5	20	6 4/5
General Courses	M.*	121	108	19	0	19	1	19	3 4/5	19	4 1/2
	W.†	51	55	19	11	19	0	20	4	19	4
Agriculture		9	10	21	5	20	1	22	0 1/2	20	5
Architecture	M.	14	13	19	5	19	5	20	0 3/4	19	11
	W.		2			21	2			21	2
Civil Engineering		44	70	19	6	19	5	19	6 3/4	19	10
Mechanical Engineering		66	81	19	6	19	1	20	0 1/8	19	2 2/3
Electrical Engineering		69	65	19	7	19	3	19	10 3/5	19	7 1/2
Medical Preparatory	M.	1	5	17	11	18	4	17	11	18	6
	W.		2			19	5			19	5
Veterinary			9			20	5			22	8
Optional	M.	17	10	19	4	20	1	19	6 3/4	20	8 1/2
	W.	10	9	19	7	22	7	22	1	22	10
Special	M.	26	54	23	8	22	1	24	11 2/3	22	9 1/2
	W.	21	28	26	1	25	1	27	6 1/4	27	10 1/3
Law	M.	98	109	21	4	20	4	21	6 3/4	21	3 1/3
	W.	1	2	22	0	25	9	22	0	25	9

* M = Men. † W = Women.

AGE OF FRESHMEN AT ENTRANCE CLASSIFIED BY COURSE AND SEX, 1896–97

		16–17	17–18	18–19	19–20	20–21	21–22	22–23	23–24	24–25	25–26	26–27	27–28	28–29	29–30	30–31	31–32	32+	Median Age		Number Admitted
																			Years	Months	
General Courses—(Arts, Phil., Science, Letters)	M.*	3	19	29	34	9	5	2	1	5	---	---	---	---	---	--	---	1	19	1	108
	W.†	1	11	14	15	4	3	1	4	1	1	---	---	---	---	---	---	---	19	0	55
Agriculture		---	1	1	1	4	1	1	1	---	---	---	---	---	---	---	---	---	20	1	10
Architecture	M.	---	1	3	4	3	---	---	1	1	---	---	---	---	---	---	---	---	19	5	13
	W.	---	---	---	1	---	---	1	---	---	---	---	---	---	---	---	---	---	21	2	2
Civil Engineering		---	7	20	14	14	7	4	3	1	---	---	---	---	---	---	---	---	19	5	70
Mechanical Engineering		1	16	22	22	11	3	4	1	---	1	---	---	---	---	---	---	---	19	1	81
Electrical Engineering		3	4	19	19	5	8	5	---	---	1	1	---	---	---	---	---	---	19	3	65
Medical Preparatory	M.	---	1	3	---	1	---	---	---	---	---	---	---	---	---	---	---	---	18	4	5
	W.	---	---	---	2	---	---	---	---	---	---	---	---	---	---	---	---	---	19	5	2
Veterinary		---	---	1	2	2	---	---	---	1	1	---	1	---	---	---	1	---	20	5	9
Optional	M.	---	1	1	2	2	2	---	---	1	1	---	---	---	---	---	---	---	20	1	10
	W.	---	---	---	---	3	1	1	1	1	2	---	---	---	---	---	---	---	22	7	9
Special	M.	---	2	5	1	7	11	10	3	6	1	1	5	---	---	---	---	2	22	1	54
	W.	---	---	---	1	2	3	1	4	3	1	1	---	1	2	1	1	7	25	1	28
Law	M.	---	2	10	28	20	18	6	5	8	4	4	1	1	1	1	---	---	20	4	109
	W.	---	---	---	---	---	---	---	1	---	---	---	---	1	---	---	---	---	25	9	2
Total		8	65	128	146	87	62	36	25	28	13	7	7	3	3	2	2	10	19	8	632

* M = Men. † W = Women.

UNSATISFACTORY WORK

The function of the Doubtful Case Committee of the former General Faculty has been performed by a similar committee from each of the faculties.

During the year 1896–97 the following action has been taken by the the different Doubtful Case Committees at the close of the respective terms:

Date	Action	Arts	Law	Agr.	Vet.	Arch.	C.E.	M.E. and E.E.
December	Dropped	12	16	4	0	0	7	19
	Warned	19	4	0	0	0	12	26
November	Dropped	6	3	1	0	1	7	9
	Warned	27	0	3	0	2	3	26
June	Dropped	3	0	0	0	0	7	12
	Warned	13	0	0	0	1	7	13

PETITIONS

The usual form of petition has been continued by the several faculties. The faculties of Agriculture, Civil Engineering, Veterinary, and Law have filed the petitions in the offices of these colleges and have notified the Registrar of the action taken; while the Arts and Sciences and Sibley College faculties have returned the petitions to this office and we have notified the students by mail. The number of petitions acted upon during the last year by the various faculties is as follows:

Grad.	Arts	Law	Agr.	Vet.	Arch.	C.E.	Sibley	Total
11	1035	130	121	1	61	302	990	2651

LATE REGISTRATION

Permits to register after registration day have been granted by the Deans of the faculties concerned. Registration for the spring term was continued on the morning of April 7, from 7 to 8 o'clock, and 126 students took advantage of the privilege and came to Ithaca by the late evening or early morning trains. The late registration in January was exceptionally large owing to the fact that registration day was on Monday.

The late registration for the year was as follows:

Term	Grad.	Arts	Law	Agr.	Vet.	Arch.	C.E.	Sibley	Total
Fall	0	20	17	2	0	1	4	12	56
Winter	20	118	49	4	1	6	20	68	286
Spring	7	33	25	5	0	2	5	41	118

TABLE SHOWING BY YEARS THE NUMBER AND KINDS OF DEGREES GRANTED BY CORNELL UNIVERSITY

	1869	1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	Total
Bachelors of Arts	8	8	7	4	17	4	8	8	5	9	7	12	18	13	10	8	6	7	8	14	11	20	23	35	39	26	29	31	39	434
Bachelors of Philosophy		7	9	9	6	3	5	3	8	2		4	4	5	5	3	4	9	17	12	16	12	13	21	26	21	24	40	47	335
Bachelors of Phil. in Hist. and Pol. Sci.															2	6	3	4		3	2	1	4	5		3	1	3	2	39
Bachelors of Literature					3	4		1	2	3	7	5	5	8	8		5	1												52
Bachelors of Letters																			17	27	19	39	31	31	30	13	20	12	16	255
Bachelors of Science		8	17	38	40	25	18	20	21				3	1	1	2		1	8	8	13	17	14	23	26	21	23	23	34	405
Bachelors of Sci. in Science and Letters									1	18	31	31	29	22	18	27	18	28												223
Graduates in Chemistry (B.S.)					4	1	1																							6
Bachelors of Science in Chemistry										3									1	2	1	2	3							12
Bachelors of Sci. in Chem. and Physics								4							1	1	1													7
Bachelors of Sci. in Physical Science										1		3																		4
Bachelors of Sci. in Mathematics											1	1	1	1				1												5
Bachelors of Sci. in Natural History								1	3	2	1		2	4	1	1	3	4		1		1	2							26
Graduates in Natural History (B.S.)					1	2	2					4																		9
Bachelors of Veterinary Science			1	1							1						1													4
Doctors of Veterinary Medicine																													3	3
Graduate in Pharmacy																					1									1
Pharmaceutical Chemists																						2								2
Bachelors of Law																				9	36	32	44	37	62	65	76	61	81	503
Bachelors of Agriculture					2	2	1	1	2	1		3	8	4	2	2	2													30
Bachelors of Science in Agriculture																		1		7	6	7	11	8	3	4	4	5		56
Bachelors of the Science of Agriculture																													8	8
Bachelors of Architecture					1	6	4	6	7	2	4	3		1	2	1	2												8	47
Bachelors of Science in Architecture																		6	4	11	6	19	8	6	8	13	18	19		118
Civil Engineers		1																10	17	21	14	15	24	30	25	25	29	23	24	258
Bachelors of Civil Engineering			7	16	18	15	8	12	15	14	10	7	9	4	10	7	9													161
Bachelors of Sci. in Civil Engineering												1		1																2
Bachelors of Mechanical Engineering					3	1	5	6	7	12	5	4	3		5	3	3													57
Mechanical Engineers																		5	12	14	13	26	24	40	47	38	36	40	56	351
Mech. Engineers in Elect. Engineering																		3	7	8	19	28	28	44	46	43	51	69	69	415
Bachelors of Sci. in Elect. Engineering																	4	2												6
Total Baccalaureate Degrees	8	24	41	68	95	63	52	62	71	67	67	78	82	64	65	61	61	82	91	137	157	221	229	280	312	272	311	326	387	3,834

TABLE SHOWING BY YEARS THE NUMBER AND KINDS OF DEGREES GRANTED BY CORNELL UNIVERSITY

	1869	1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	Total
Masters of Arts	----	----	----	----	1	----	----	4	2	1	----	----	----	1	2	2	2	3	1	3	1	8	6	6	4	8	2	1	10	68
Masters of Philosophy	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	----	2	----	3	1	3	----	10
Masters of Science	----	----	----	1	----	3	3	2	3	----	1	2	1	1	2	1	5	3	3	3	6	7	7	5	4	9	5	8	----	85
Masters of Science in Agriculture	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	2	2	----	1	3	5	13
Architecture	----	----	----	----	----	----	----	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1
Masters of Science in Architecture	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	1	1	1	4
Masters of Letters	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	3	2	3	----	----	9
Masters of Law	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	7	5	3	11	10	8	4	7	55
Civil Engineers	----	----	----	----	1	4	----	2	2	2	2	1	2	----	2	1	----	----	----	----	----	----	----	----	----	----	----	----	----	19
Masters of Civil Engineering	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	----	1	----	1	2	----	2	8	4	----	1	20
Mechanical Engineer	----	----	----	----	----	----	----	----	----	----	----	----	----	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1
Masters of Mechanical Engineering	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	----	2	1	6	3	6	14	16	8	15	6	78
Doctor of Veterinary Medicine	----	----	----	----	----	----	----	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1
Doctors of Laws (honorary)	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	2	----	----	----	----	----	----	----	----	----	----	----	2
Doctors of Science	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	2	----	----	----	----	----	----	2	3	6	3	3	19
Doctors of Philosophy	----	----	----	1	1	1	----	----	1	----	1	1	----	----	----	----	3	1	----	3	1	2	3	8	4	16	13	14	11	85
Total Advanced Degrees	0	0	0	2	3	8	3	10	8	3	4	4	3	3	6	4	10	13	4	12	9	32	26	33	46	76	52	52	44	470
Grand Total	8	24	41	70	98	71	55	72	79	70	71	82	85	67	71	65	71	95	95	149	166	253	255	313	358	348	363	378	431	4,304

The above tables give the number admitted to graduation at the 1897 commencement as well as those of former years. Care has been taken to discriminate between closely allied degrees but such have been grouped so as to show at a glance the number in each department.

Respectfully submitted,

D. F. HOY,

Registrar.

APPENDIX XI

REPORT OF THE LIBRARIAN

To the President of the University:

SIR :—I have the honor to submit herewith the annual report on the University Library for the year 1896–97.

The following table shows the additions made during the year ending July 31st, 1897, and the total present extent of the Library :

	ADDITIONS 1896–97		PRESENT EXTENT	
	Volumes	Pamphlets	Volumes	Pamphlets
General Library	10,005	3,100	172,418	33,500
Law Library	774	----------	25,044	----------
Totals	10,779	3,100	197,462	33,500

Of the 10,005 volumes added to the General Library, 2,776 volumes were received as gifts, and 147 volumes were additions to the various seminary libraries. The seminary libraries now contain 2,750 volumes, and this number is included in the estimate of the General Library given above.

The largest gift of the year consists of the additions made by Willard Fiske to the Dante collection, aggregating over 900 volumes. From His Highness the Maharajah of Jeypore the Library has received a set of the valuable Jeypore portfolios of architectural details, and from the Lords Commissioners of Her Majesty's Treasury forty-four volumes of the Reports of the scientific results of the voyage of H. M. S. Challenger. Ex-President White has continued to make large additions to the White Historical Library. To yourself and to Professors Burr, Caldwell, Crane, Hart, and Thurston the Library is indebted for many valuable gifts. Important additions to the Library have also been made by Mr. Botterel of Ottawa, F. E. Tibbetts, '72, Theodore Stanton, '76, and M. E. Poole, '80. From the U. S. Coast and Geodetic Survey the Library has received a further gift of 308 charts, making our set of the Coast Survey charts practically complete to date. From the national and state governments the usual supply of public documents has been received, and the British and Canadian Patent Offices continue to present to the Library their valuable publications. For all these and the numerous minor gifts received due acknowledgment has been made to the respective donors.

The purchases from the income of the Sage Endowment Fund include complete sets of the publications of the Chetham Society, Hunterian Club, Spenser Society, Society of Biblical Archaeology, Sanitary Institute of Great Britain; also complete sets of the Alpine Journal, Princeton Review, Journal of Biblical Literature, Annales de la Faculté des Sciences de Toulouse, Bulletin de la Societé minéralogique de France, Comptes Rendus de l'Académie des Sciences morales et politiques, Le Génie Civil, Jahrbuch der Photographie, and several important sets have been completed by the purchase of back volumes. Among the important purchases of the year may also be noted the Corpus Inscriptionum Semiticarum, the Assyriologische Bibliothek, Grosart's edition of Spenser, the Poètes de Champagne, Petites Poètes et Conteurs du 18^e^ Siècle, Historical Records of the British Army, Altertümer von Pergamon, and an interesting collection of Hymnology, made by the well-known hymn writer, the late Horatio Bonar of Edinburgh, a collection numbering 225 volumes.

At the joint request of the Professor of Ancient Philosophy and the Professors of Greek and Latin, a collection of 2,000 dissertations on the works of the Greek and Roman philosophers was purchased for the Library, the department of philosophy undertaking to arrange and care for the collection which has been placed in the philosophical seminary and arranged in a series of pamphlet cases in the order of the printed catalogue.

Dr. A. C. White, Assistant Librarian in charge of classification, and Miss Fowler, in charge of the catalogue, report that the work of classifying and cataloguing the books added to the Library has been carried on with promptness and regularity. Miss Runner, who has been engaged in arranging, for binding and cataloguing, the pamphlets of the Zarncke collection, has completed that work, and the remaining portion of the miscellaneous division of the White Library has been classified and catalogued. Mr. Koch, who has been engaged upon the catalogue of the Dante collection, reports that the number of volumes in this collection has now reached 6,031, of which 1,971 have been added within the last two years. All the work of entering and classifying, as well as cataloguing these recent additions has been done by Mr. Koch alone, in order to ensure the consistency of style and treatment absolutely necessary in a printed catalogue of such an extensive and important collection, and this has somewhat delayed the preparation of the work for the printers. There is now in type the list of editions of the Divina Commedia in the original and translations. This is the most important division of the catalogue, requiring the most painstaking care in its preparation. For part two, the list of works on Dante, all the periodical and general literature in the Library has been analysed, whether on the Dante shelves or not, and the number of entries in this part, which will go next to the printer, probably exceeds twelve thousand.

From the White Historical Library, Professor Burr, the Librarian, reports that the printing of the catalogue or finding list, of the miscellaneous division of the President White Library has been completed, and work has been begun on the final division of that catalogue, dealing mainly with the history of superstition and persecution. On the continuation of the catalogue Miss L. E. Babcock has been employed, since the opening of the spring term, under the direction of the Librarian.

Mr. W. H. Austin, Assistant Librarian in charge of the Reference Library, reports that the library has been open 308 days during the year, and until 9:30 o'clock in the evening on 164 of these days. The following table gives a statement of the recorded use of the library during the year 1896–97:

REFERENCE LIBRARY AND READING ROOM	
No. of volumes added permanently to the collection	135
No. of new periodicals placed in the periodical room	28
No. of volumes placed on the shelves for special work	112
No. of volumes given out at delivery desk for use in the room	72,193
SEMINARY COLLECTIONS	
No. of volumes deposited in the several rooms	375
No. of volumes sent to the rooms for special work	1,724
DEPARTMENT COLLECTIONS	
No. of volumes deposited in the several buildings	512
CIRCULATION	
No. of volumes drawn by University officers	12,290
No. of volumes drawn by students for home use	2,994
Total recorded use	90,993

As noted above, three hundred and seventy-five volumes have been transferred from the collections in the general library to the seminary rooms, while four hundred and ninety-six volumes have been returned from the seminary rooms to the general library, leaving the total number of volumes now on deposit in the seminary rooms 5,022. The number of volumes transferred from the general library to the various departments, during the year, was five hundred and twelve, and the number returned to the general library was five hundred and twenty, leaving the total number of volumes from the general library now on deposit in the departments 6,483.

The number of cards of admission to the stacks, by which students engaged in advanced special work are granted access to designated divisions of the stack-rooms for the consultation of books at the shelves, is larger than in any previous year, as is shown by the following table giving the numbers issued for the last five years:

SUBJECTS	1892-3	1893-4	1894-5	1895-6	1896-7
History and Political Science	40	43	31	44	60
Literature and Philology	21	22	21	19	36
Philosophy and Education	18	10	8	22	12
Science and Technology	78	86	60	87	87
Totals	157	161	120	172	195

The larger the number of persons to whom free access to the shelves in the stack-rooms is granted the greater is the risk of books being misplaced, and during the past year, if we take into account the officers of the university, over four hundred persons have had this privilege. Since last September an attendant has spent much time in going systematically over the presses for the purpose of putting in their proper places any volumes which might be found misplaced, and the result of this work showed an average of two volumes to each press out of place, and this notwithstanding the pains that are taken to impress upon every one admitted to the stacks the imperative necessity for constant care in returning books to the shelves. Since the close of the spring term a careful and thorough inspection of the various department collections has been made, showing that, of the 6,483 volumes deposited in the departments, 55 volumes were missing and unaccounted for on July 31st.

Since my last report, it has been found possible, by the erection of a glass screen, to set aside the western end of the Political Science Seminary room as a map room, and three cases of wide shallow drawers have been fitted up to contain unmounted maps, giving much better facilities for the consultation of our growing collection of maps.

In consequence of the rapid growth of the library the card catalogue has quite outgrown the space allotted to it, and rendered it necessary to replace the old cases by others which, while occupying the same floor space, will provide for 556,000 cards, or more than double the capacity of the present cases, with provision for further extension. The new cases will be put in place at the close of the summer school, and will be in readiness for the opening of the fall term.

The annual record of publications by University officers has been prepared, as heretofore, to appear as a supplement to the Annual Report of the President. During the winter and spring terms I gave, as usual a course of lectures on Bibliography.

Respectfully submitted,

GEO. WM. HARRIS,

Librarian.

APPENDIX XII

TABLE SHOWING THE COURSES GIVEN, THE NAMES OF PROFESSORS AND INSTRUCTORS, THE NUMBER OF HOURS IN EACH COURSE, AND THE NUMBER OF STUDENTS ATTENDING EACH COURSE

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
ACADEMIC DEPARTMENT				
SEMITIC LANGUAGES AND LITERATURES				
1. Hebrew: grammar; exercises in composition; reading of Genesis and I. Samuel. Professor Schmidt	3	4	4	4
3. Aramaic: grammar; selections from Ezra, Daniel, the Targums, the Edessene Versions and the Samaritan Pentateuch. Professor Schmidt	2	1	1	1
4. Old Testament literature: the Hexateuch (fall); Jeremiah (winter); the Psalter (spring). Professor Schmidt	2	4	5	4
5. Oriental History: Babylonia and Assyria (fall); Persia (winter); Egypt (spring). Professor Schmidt	2	4	4	4
CLASSICAL ARCHÆOLOGY AND HISTORY OF ART				
1. Classical archæology. Associate Professor Emerson	2	6	6	5
5. Studies in the Museum of Casts: a peripatetic introduction to the University collection of plaster casts from the antique. Associate Professor Emerson	1	6	10	10
7. Philological and archæological readings in Greek, Latin, German, French, Italian, and English. Associate Professor Emerson	1	3	3	3
COMPARATIVE PHILOLOGY				
2. Comparative grammar of the Greek and Latin languages: historical treatment of the sounds and inflections of the Greek and Latin languages in their relation to the other Indo-European languages. Professor Wheeler	2	9	10	10
3. Sanskrit, elementary: grammar and reader. Associate Professor Bristol	2	3	5	3
4. Sanskrit, advanced: selections from the Rig-Veda; grammatical discussions; lectures on the private and religious antiquities of the ancient Hindoos. Professor Wheeler	2	2	2	2

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
GREEK				
A. Elementary Greek: grammar, composition, Xenophon, Plato. Dr. Forman (fall and winter); Dr. Wright (spring)	3	18	11	10
1. Freshman course: Lysias, Homer, Plato. Associate Professor Bristol (three hours weekly), Dr. Forman (three hours weekly, fall and winter), and Dr. Wright (three hours weekly, spring)	3	70	61	62
2. Sophomore course: Demosthenes, Sophocles, Aristophanes; extra reading, Lucian, Euripides, Aristophanes. Professor Wheeler, and Dr. Forman (in the fall term only, one half hour weekly)	3	45	43	43
2a. Supplementary course: Xenophon, Herodotus, Lucian. Dr. Forman (fall and winter), Dr. Wright (spring)	2	10	12	10
3. Junior course: Thucydides, Demosthenes, Aeschylus. Associate Professor Bristol	3	12	12	15
5. Oratory: Andocides, Lysias, and Isaeus; lectures on the development of Attic oratory, and on Attic legal antiquities. Associate Professor Bristol	2	5	5	5
8. Aristophanes: the Knights, Clouds, Wasps, Peace, Birds, Frogs; lectures on the development of Greek comedy and its scenic representation. Dr. Forman (fall, and half of winter); Associate Professor Emerson (spring, and half of winter)	3	9	9	8
9. The private and political antiquities of the Greeks. Professor Wheeler	2	65	54	43
12. Advanced Greek composition. Dr. Forman (fall and winter), and Dr. Wright (spring)	2	11	13	12
13. New Testament Greek. Dr. A. C. White	2	2	1	1
16. Philological seminary: epigraphy; reading Greek inscriptions from plaster casts and paper impressions; interpretation of some Attic inscriptions; preparation and discussion of papers. Professor Wheeler	3	5	5	5
LATIN				
1. Freshman course: Livy, Cicero, Horace, Latin writing. Professor Bennett (three hours weekly), Assistant Professor Elmer (three hours weekly), and Mr. Edmiston (six hours weekly)	3	115	110	103
2. Sophomore course: Terence, Horace, Tacitus; collateral reading on the history of Rome during the life of Horace; Latin writing. Assistant Professor Elmer (six hours weekly), and Mr. Edmiston (three hours weekly)	3	83	80	81
3. Selections from Cicero's Letters; Cicero, De Oratore. Assistant Professor Elmer	2	8	8	8

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
5. Selections from the Republican literature: Plautus, Lucretius, Catullus. Professor Bennett	3	21	20	20
7 Advanced Latin writing. Assistant Professor Elmer	1	8	9	8
8. Teachers' training course: (a) study of the evidences for the pronunciation of Latin; hidden quantities; peculiarities of orthography; theoretical consideration of Latin syntax. Professor Bennett	1	22	20	21
(b) Practical exercises in the study of the grammar, Cæsar, Nepos, Cicero, and Vergil. Professor Bennett	1	16	13	14
10. Latin seminary. Professor Bennett	2	4	4	4
12. Historical Latin syntax. Professor Bennett	1	2	2	2
13. Reading of easy Latin at sight; Nepos, Gellius, Ovid. Mr. Edmiston	1	18	17	20
THE GERMANIC LANGUAGES				
1. German grammar and reader: Harris's German composition; easy plays and stories. Dr. Jones (twelve hours weekly), and Mr. Viles (six hours weekly)	3	135	110	102
2. Schiller's Wilhelm Tell; Heine's Prose; Goethe's Herrmann und Dorothea. Professor Hewett (six hours weekly), and Mr. Viles (nine hours weekly)	3	116	99	95
3. Advanced German composition. Dr. Jones (fall)	2	20	---	---
(winter and spring)	1	---	19	19
4. Goethe's Faust, Parts I and II. Fall and winter. Professor White	3	84	83	--
5. Heine, life and writings: the romantic school; novelists, poets, dramatists. Professor Hewett,	3	24	22	21
6. Modern German lyrics. Spring. Professor White	3	---	---	66
7. Middle High German lyric poetry: des Minnesangs Frühling; Walther von der Vogelweide; lectures on early German life and literature. Professor Hewett	2	4	4	4
8. History of the German language. Fall and winter. Professor White	2	8	7	--
9. Old High German: selections from Tatian, Isidore, the Monsee fragments, etc., examined with special reference to Middle High German. Winter and spring. Dr. Jones	2	---	5	5
10. German letters: examination and translation of forms of correspondence, including the study of many facsimiles of German chirography. Spring. Professor White	2	---	---	8
12. German seminary: the life and works of Lessing. Professor White	2	9	8	8
Theses, undergraduate. Professor White	2	7	7	7
Theses, graduate. Professor White	2	2	2	2

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
THE ROMANCE LANGUAGES				
1. Van Daell, Introduction to the French Language; Rollins's French Reader; Crane's Tableaux de la Révolution Française. Messrs. Lodeman, Vergauven, Moore, and Olmsted (each six hours weekly)	3	213	163	157
2. Alfred de Vigny's Cinq Mars; Crane's Le Romantisme Français; Alfred de Musset's comedies. Messrs. Lodeman, Moore, and Olmsted (each six hours weekly)	3	119	104	104
3. Literature of the seventeenth century: lectures and recitations based on Bernardin's Morceaux choisis des classiques français du XVII^e siècle, with reading of plays by Corneille, Racine, and Molière. Professor Crane	3	49	46	46
4. The precursors of the French romantic school: Chateaubriand, Madame de Staël, Stendhal, Nodier, etc.; recitations and lectures. Professor Crane	2	13	12	11
5. French seminary: French society in the seventeenth century, with special reference to the Précieux movement as satirized in Molière's Précieuses ridicules and Femmes savantes. Professor Crane	2	9	9	9
6. Origin and development of the French language and literature down to the seventeenth century: lectures. Professor Crane	1	17	16	15
7. Recent French prose writers: Daudet's Le Nabab; Bourget, extraits choisis; Zola's La Débacle; etc. Mr. Moore	2	19	23	21
8. Romance seminary: phonetics; early French texts; etc. Mr. Lodeman	2	5	4	4
9. General survey of French literature: lectures and recitations based on Alcée Fortier's Histoire de la litterature française; conducted entirely in French. Mr. Vergauven	2	3	3	3
10. Elementary course in French conversation. Mr. Vergauven	2	28	28	26
11. Advanced course in French conversation and composition. Mr. Vergauven	2	5	5	5
12. Molière and his time. Mr. Vergauven	1	7	8	10
13. Italian reading: selections from Dante, Petrarch, and Boccaccio, with lectures on early Italian literature. Professor Crane	2	7	7	7
14. Italian grammar and reading. Mr. Olmsted	2	16	13	10
15. Spanish grammar and reading. Mr. Lodeman	2	21	14	11

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
ENGLISH				
Rhetoric				
1. Freshman rhetoric: Hart's Handbook of English Composition, with readings in Macaulay, Carlyle, De Quincey; essays and short papers throughout the year. Dr. McKnight (eight hours weekly), Mr. Andrews (four hours weekly), and Mr. Gaston (four hours weekly). One lecture weekly. Professor Hart	3	234	213	190
2. Sophomore rhetoric: critical reading of selections in exposition, with essays throughout the year. Messrs. Northup (four hours weekly), and Sembower (four hours weekly)	2	106	103	97
3. Junior rhetoric: selections from the prose of Bacon, Milton, Dryden, Swift; lectures upon the formation and growth of English prose, with collateral reading and essays. Dr. Strunk,	2	16	13	12
4. Senior rhetoric: teachers' seminary; study of the general theory of composition, with reading and criticism of the books prescribed for entrance examination in English; preparation of themes for school composition. Professor Hart,	3	19	17	12
PHILOLOGY				
6. Old English, introductory course. Dr. Strunk	2	6	5	7
7. Early English philology: formation of the English language. Fall, Gothic. Winter and spring, Old English. Dr. Strunk	3	7	7	6
8. Advanced English philology: reading of longer Early or Middle English texts, with investigation of dialectical peculiarities. Professor Hart,	2	6	6	6
8a. Seminary in English philology. Professor Hart,	----	1	0	1
9. Middle English philology: reading from Middle English texts, with lectures on Middle English grammar. Professor Hart	3	4	4	4
10. History of the English language: recitations and lectures. Dr. Strunk	2	8	7	7
13. Icelandic: Noreen, Altisländische Grammatik; readings from the Edda. Professor Hart	2	2	2	2
ENGLISH LITERATURE				
15. Lectures on English literature (about 200 in all) from Chaucer to Tennyson and Browning, in eight groups, of which Chaucer, Spenser, Shakespeare, Milton, Dryden, Pope, Wordsworth, Browning, and Tennyson were made the central figures. Professor Corson	5	64	65	65
17. Readings, by the Professor, from English and American literature of the 19th century, poeti-				

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
cal and prose (chiefly the latter), with comments. A program of the readings being furnished in the fall, the students were required to read the selections in advance of the professor. Professor Corson	2	105	126	167
18a. Seminary in English literature: 19th century prose, not including novels. Professor Corson	2	1	1	1
19a. Seminary in English literature: novels of the 19th century. Professor Corson	2	23	23	23
ELOCUTION AND ORATORY				
20. Public speaking: study of mental concepts, interpretation, and expression; instruction in breathing, voice building, articulation, inflection, gesture, and general delivery. Assistant Professor Lee (nine hours weekly); Mr. Edson (six hours weekly); and Mr. Lewis (six hours weekly)	3	67	65	59
20a. Public speaking; adapted to the special needs of law students. Mr. Shurter (six hours weekly)	2	72	62	53
21. Oratory: the writing and delivery of orations; theory and practice. Fall, lectures upon oral discourse and the structure of orations; the study and analysis of British and American masterpieces; exercises in writing orations, speeches and addresses. Each production read and criticised with the author. Winter, weekly public oratorical exercises; seminary for the study of English style in oral discourse. Assistant Professor Lee	3	21	16	---
22. Forensics: theory and practice of argumentation; brief-drawing; forensic-writing; debate; personal criticism and suggestion. Fall and winter. Assistant Professor Lee	2	10	---	28
23. Extempore speaking: exercises based on assigned topics, thoroughly mastered, in the fields of American history, political science, education, and current events. Assistant Professor Lee (fall four hours weekly, winter and spring two hours weekly)	2	24	14	6
PHILOSOPHY				
1. Physiology, psychology, logic. Fall, physiology (See under PHYSIOLOGY AND VERTEBRATE ZOOLOGY). Winter, psychology; lectures, Professor Titchener (two hours weekly); and recitations, Dr. Albee (three hours weekly), and Mr. Schiller (three hours weekly). Spring, logic; lectures, Professor Creighton (two hours weekly); and recitations, Dr. Albee (three hours weekly) and Mr. Schiller (three hours weekly)	3	---	171	175

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
2. Experimental psychology: lectures and laboratory work. Professor Titchener (six hours weekly), and Dr. Pillsbury (five hours weekly).	3	4	4	5
4. History of philosophy: lectures, prescribed reading, and occasional essays. Professor Creighton	3	6	5	5
5. Ethics: lectures, discussions, and text book study. Professor Seth	2	11	9	8
7a. Primitive religion. Professor Charles M. Tyler,	1	11	8	8
7b. Comparative history of religion. Professor Charles M. Tyler	1	12	8	8
8. The institutes of education: lectures. Professor S. G. Williams	3	32	29	28
10. Aristotle's Nichomachean Ethics. Assistant Professor Hammond	3	2	2	2
11. Reading of psychology in French, German, Italian. Professor Titchener	1	6	6	7
12. Rapid reading of German philosophy. Schopenhauer's Uber die vierfache Wurzel des Satzes vom zureichenden Grunde. Mr. Schiller	1	2	1	---
13. Systematic psychology: lectures, essays and experimental illustrations. Professor Titchener (three hours weekly)	3	17	17	18
14. Mental derangement, lectures: mental diseases historically considered; the forms of insanity; modern hospitals and the treatment of the insane; crime and responsibility. Spring. Dr. Wagner	1	---	---	---
15. The Critical Philosophy of Kant: advanced course. Dr. Albee	2	4	4	4
16. Spinoza's Ethics: recitations, discussions, and essays. Fall. Dr. Albee	2	1	---	---
17. Ethics (advanced): essays and discussions, with occasional lectures. Professor Seth	2	11	11	12
18. Applied ethics: lectures on the practical value of the ethical ideas given by sociology, utilitarianism, æstheticism, optimism, and culture; lectures on the bearing of moral standards upon social relations, the duties of friendship, riches, and poverty, public opinion, the press, incivism, and kindred topics. Professor Charles M. Tyler	1	5	6	6
19. Post-Kantian idealism: Fichte's Wissenschaftslehre, Schelling's System des Transcendentalen Idealismus, Hegel's Wissenschaft der Logik. Professor Creighton	3	8	9	8
21. The philosophy of evolutionism, with special reference to Spencer's Synthetic Philosophy; lectures and essays. Mr. Schiller	3	5	3	3
25. Philosophy of religion: (a) lectures on the grounds of religious belief—metaphysical, ethical, æsthetical, and spiritual. Professor Charles M. Tyler	1	3	3	3

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
(b) Discussions and essays on the basis of Martineau's Study of Religion and Lotze's Outlines of Philosophy of Religion. Professor Charles M. Tyler	1	5	6	6
26. School supervision: lectures. Spring. Professor S. G. Williams	2	---	---	1
27. Pedagogical conference. Professor S. G. Williams	2	3	7	7
28. The history of education: lectures. Professor S. G. Williams	2	23	22	21
29. Seminary for experimental psychology and advanced laboratory work: in graduate and undergraduate sections. Professor Titchener (six hours weekly), and Dr. Pillsbury (seven hours weekly)	----	9	12	13
30. Seminary in ancient and mediaeval philosophy. Assistant Professor Hammond	2	2	2	2
31. Seminary in modern philosophy. Professor Creighton	2	2	2	2
32. Ethical seminary. Professor Seth	2	2	2	2
34. Pedagogical seminary. Undergraduate section. Professor S. G. Williams	2	3	3	3
MUSICAL COURSES				
1. A course in voice-production and elementary sight-reading. Conducted by Mr. Dahm-Petersen and Mr. Beall, of the Conservatory of Music	1	9	10	10
2. A course in anthem-singing and hymnology: instruction and practice. Conducted by Mr. Dahm-Petersen and Mr. Beall, of the Conservatory of Music	1	16	16	16
HISTORY AND POLITICAL SCIENCE—I. HISTORY				
A. Ancient and Mediæval History				
1. Ancient Greece: lectures and examinations; fall, to the end of the Persian wars; winter, to the march of Alexander. Professor Morse Stephens. Spring, to the absorption by Rome. Professor Burr	2	15	14	12
2. The private and political antiquities of the Greeks. Professor Wheeler. (See under GREEK, course 9)	----	---	---	---
4. Europe during the Middle Ages: Fall, the Renaissance and the Reformation. Professor Morse Stephens. Spring, from Constantine to the Crusades. Professor Burr	3	18	---	11
5. Seminary in mediæval history. Professor Burr	2	---	---	9

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
B. Modern European History				
13. General history of England: lectures and examination on text-book. Professor Morse Stephens,	3	135	124	122
14. General history of Europe from the commencement of the 17th century to the present time: lectures and examinations. Professor Morse Stephens	3	37	37	37
16. History of the Napoleonic era, 1799–1815, lectures. Professor Morse Stephens	2	20	21	20
17. Constitutional history of England; lectures. Professor Morse Stephens	2	18	17	16
18a. Seminary in English history: the work of the fall term is devoted to acquiring a knowledge of materials and authorities; the winter term to the critical examination of authorities and the study of the laws of historical evidence; and the spring to the conceptions of jurisprudence and their application to history. Professor Morse Stephens	2	8	9	8
18b. Seminary in modern European history; the work of the year is distributed as in 18a. Professor Morse Stephens	2	8	8	7
C. American History				
22. American history from the end of the war for independence to the present: lectures, topical reports, and special examinations. Fall and winter. Professor M. C. Tyler	3	99	93	96
23. American constitutional history: lectures, direct study of constitutional documents, and topical reports. Professor M. C. Tyler	2	16	14	11
28. Undergraduate seminary. Professor M. C. Tyler,	2	7	7	6
29. American historical seminary: open only to graduates. Professor M. C. Tyler	2	9	9	9
II. POLITICAL SCIENCE				
A. Politics				
31. Political institutions: (a) nature and historical development of political institutions; (b) the government of the United States, including local goverment, studied with special reference to its practical working; (c) comparative study of the governments of Europe, especially England, France, Germany, and Switzerland; (d) municipal government. Professor Jenks	3	28	30	27
32. History of political ideas: critical study of leading writers on politics; lectures and reports. Professor Jenks	1	17	16	14

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
34. Introduction to political science: lectures on the nature of politics, social science, economics, and finance, and their relations to cognate sciences. Spring. Professor Jenks, Associate Professor Willcox, and Assistant Professor Hull,	3	---	---	58
B. Social Science and Statistics				
41. Elementary social science: introduction treating of anthropology and the evolution of the family, followed by lectures on race problems and immigration, pauperism, and crime. Associate Professor Willcox	2	37	31	31
42. Advanced social science: a detailed study, by the seminary method, of the condition of manual laborers in various parts of the world; readings and reports. Associate Professor Willcox,	2	6	6	6
44. Social statistics: statistical methods and results, with practical work in investigation and tabulation; especial attention given to interpreting the social statistics of the United States presented by the eleventh census. Associate Professor Willcox	2	9	9	9
C. Political Economy and Finance				
51. Elementary political economy. Fall and winter. Lectures, Professor Jenks (two hours weekly), and text-book, Dr. Bullock (fall, three hours, winter, four hours weekly)	3	77	78	---
53. Recent economic theories, American, English, and Continental: abstracts and lectures. Assistant Professor Hull	2	8	7	7
54. Money, credit, and banking: an historical course, with special reference to the monetary experience of the United States. Assistant Professor Hull	3	14	14	13
55. The labor question: (a) methods of industrial remuneration; the wages system, profit-sharing, cooperation, etc.; (b) history of trades unionism; (c) an historical and critical sketch of the leading writers on socialism, communism and anarchism. Dr. Bullock	2	19	17	30
56. Economic legislation: study of current economic problems, especially from the standpoint of practical legislation; preparation and discussion of legislative measures, with special attention to monopolies, money, and the banking system. Professor Jenks	2	9	7	7
57. Recent economic history of Europe and the United States: lectures, readings, reports. Dr. Bullock	2	7	7	7
59. Finance: taxation, financial administration, pub-				

	DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
			1st Term	2nd Term	3rd Term
	lic debts; text-book, lectures, and reports. Assistant Professor Hull	2	6	5	4
60.	History of political economy: lectures and assigned reading. Fall. Assistant Professor Hull	2	2	---	---
61.	Financial and constitutional history of the state of New York. Winter. Assistant Professor Hull,	2	---	7	---
62.	Transportation: lectures and collateral reading, with text-book. Spring. Assistant Professor Hull	3	---	---	42
63.	Tariff history of the United States. Dr. Bullock,	1	1	2	2
68.	Lectures by the department Fellows: (a) methods of keeping the public money of the United States, Mr. Phillips (two lectures), (b) pension legislation of the United States, Mr. Glasson (one lecture), (c) the conjugal condition of the people of the United States, Mr. Gerling (two lectures). Spring	----	---	---	---
69.	Undergraduate seminary in political science. Professor Jenks, Associate Professor Willcox, Assistant Professor Hull and Dr. Bullock	2	18	18	18
70.	Graduate seminary in political science; for those engaged in special investigations. Professor Jenks, Associate Professor Willcox, Assistant Professor Hull, and Dr. Bullock	2	9	8	8

MATHEMATICS

I. Prescribed Work

	DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	1st Term	2nd Term	3rd Term
1.	For students in Arts, Philosophy, and Agriculture: fall, solid geometry; winter, algebra; spring, trigonometry. Professor Jones (six hours weekly), Assistant Professor Tanner (three hours weekly, fall, six hours weekly, winter), and Dr. Hutchinson (three hours weekly, spring)	3	75	90	80
2.	For students in Science and Letters: fall, solid geometry; winter, algebra; spring, trigonometry. Professor Jones	5	18	20	26
3.	For students in Civil Engineering. Fall, algebra; winter, trigonometry; spring, analytic geometry. Dr. Murray (five hours weekly, fall), Dr. Snyder (five hours weekly, winter and spring), Assistant Professor Tanner (five hours weekly, spring), and Mr. Allen (five hours weekly throughout the year)	5	51	66	72
4.	For students in Sibley College courses: fall, analytic geometry; winter, differential calculus; spring, integral calculus. Professor Wait (five hours weekly, spring), Assistant Professor Tanner (five hours weekly, fall and winter, and ten hours, spring), Dr. Murray and Dr. Snyder				

	DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
			1st Term	2nd Term	3rd Term
	(each five hours weekly throughout the year), Dr. Hutchinson and Mr. Allen (ten hours weekly, fall and winter, and five hours, spring)	5	167	147	146
6.	For students in Architecture: fall, analytic geometry; winter, differential calculus; spring, integral calculus. Assistant Professor Tanner.	3	18	17	16
7.	For students in Civil Engineering: fall, differential calculus; winter, integral calculus. Professor Wait (five hours weekly, fall), Dr. Hutchinson (five hours weekly, fall and winter), and Dr. Murray (five hours weekly, winter)	5	47	55	---
	II. Elective Work—A. Pure Mathematics				
10.	Short course in analytic geometry and calculus. Assistant Professor McMahon	3	22	18	16
11.	Problems in geometry, algebra, and trigonometry. Professor Jones	1	17	23	19
12.	Higher algebra and trigonometry: a continuation of courses 1 and 2. Professor Jones	3	9	7	6
13.	Modern synthetic geometry, including projective geometry. Dr. Snyder	3	7	5	4
14.	Theory of equations with determinants and an introduction to binary quantics. Mr. Allen	2	1	1	1
15.	Advanced analytic geometry. Professor Wait	3	2	2	6
16.	Binary quantics. Assistant Professor Tanner	2	1	1	1
17a.	Advanced differential calculus. Professor Wait	3	4	4	---
17b.	Advanced integral calculus. Professor Wait (fall and winter), Assistant Professor McMahon (spring)	2	3	3	4
21.	Differential equations. Dr. Murray	3	4	4	9
23.	Lie's theory of continuous groups. Dr. Hutchinson	2	1	1	1
25.	Theory of functions. Dr. Snyder	3	1	1	1
	B. Astronomy and Mathematical Physics				
40.	Descriptive and theoretical astronomy. Dr. Murray	2	1	1	1
42.	Fourier's series and spherical harmonics; introductory to mathematical physics. Assistant Professor McMahon	2	2	2	2
44.	Mathematical theory of sound. Assistant Professor McMahon	3	2	3	3
45.	Mathematical theory of elasticity. Assistant Professor McMahon	1	1	1	1
46.	Applications of dynamics. Assistant Professor McMahon	2	1	1	1
	Theses	2	4	4	4

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR		Hours	Attendance		
			1st Term	2nd Term	3rd Term
	PHYSICS				
1.	Mechanics and heat; electricity and magnetism, acoustics, and optics; lectures, Professor Nichols (two hours weekly), and recitations, Messrs. Hotchkiss (four hours weekly), Sharp (four hours weekly), Timmerman (two hours weekly), and Stewart (two hours weekly)	3	102	---	---
		4	---	94	91
2a.	Elementary physics; short course; lectures, Professor Nichols (two hours weekly), and recitations, Mr. Shearer (two hours weekly), and Mr. Child (three hours weekly)	3	103	114	96
2b.	Elementary physics; longer course; lectures, Professor Nichols (two hours weekly), recitations and laboratory, Mr. Rogers (four to six hours weekly)	5	26	23	19
3.	Physical experiments: theory and methods. Messrs. Rogers (ten hours weekly), Shearer sixteen hours weekly), Child (sixteen hours weekly), and Stewart (eleven hours weekly)	2	124	114	86
4.	Electrical measurement: tests of electrical instruments and determination of constants; theory and experimental study of dynamo machines, including tests of efficiency; alternating currents; photometric and electrical tests of electric lamps. Assistant Professor Moler (twenty-five hours weekly), Assistant Professor Bedell (twenty hours weekly), Mr. Hotchkiss (twenty hours weekly), and Mr. Timmerman (twenty hours weekly)	4	83	93	86
5.	Short course in heat and applied electricity. Assistant Professor Moler	2	32	37	26
6.	Advanced laboratory practice in general physics. Professor Nichols and Assistant Professor Merritt (each twenty hours weekly)	2-5	3	4	---
8.	Theory of the galvanometer; application of photometry to electric lighting; theory of the telephone; lectures. Professor Nichols	1	70	66	54
9.	Practical photography: lectures and laboratory practice. Spring. Professor Moler (twenty-five hours weekly), Mr. Hotchkiss (twenty hours weekly), and Mr. Sharp (twenty hours weekly),	2	---	---	165
10.	Thermodynamics. Mr. Rogers	2	3	3	---
11b.	Theoretical physics: electricity and magnetism. Assistant Professor Merritt	4	12	10	10
12.	Recent advances in experimental physics. Assistant Professor Merritt	1	14	12	12
14.	Theory of light. Mr. Shearer	3	7	7	7
17.	Seminary in physics: critical reading of original memoirs relating to physics, and reports on original work done in the department. Professor Nichols	2	10	9	11

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
18. Absolute measurements in electricity and magnetism: laboratory practice in the determination of current, electromotive force, resistance, electric capacity, and the magnetic elements in absolute measure. Assistant Professor Moler and Assistant Professor Bedell	1–5	5	7	5
20. Advanced spectroscopy. Professor Nichols and Assistant Professor Merritt	10	2	---	---
	5	---	2	---
21. Magnetism of iron. Fall. Assistant Professor Bedell	1	17	---	---
22. Theory of alternating currents. Fall and winter. Assistant Professor Bedell	2	10	11	---
23. Magnetism and electricity. Winter and spring. Assistant Professor Bedell	2	---	4	2
24. Theory of the dynamo and motor. Winter and spring. Mr. Timmerman	2	---	7	8

CHEMISTRY

I. Required Courses

1. General inorganic chemistry, (a) lectures, Professor Caldwell (three hours weekly), and Mr. Haywood or Mr. Smith (ten hours weekly)	1	285	256	250
(b) Recitations and laboratory practice. Assistant Professor Trevor (seventeen hours weekly), Dr. Kortright (twenty-one and one half hours weekly), and Messrs. Snell (twenty-two and one half hours weekly), and Taylor (twenty-two and one half hours weekly)	2	273	242	229
2. Qualitative analysis; elementary course. Fall and winter. Associate Professor Dennis, Mr. Smith (twenty to forty hours weekly), Mr. Benedict (twenty to forty hours weekly), and Mr. Knox (twenty to forty hours weekly)	3	125	118	---
3. Quantitative analysis; elementary course. Spring. Associate Professor Dennis, Mr. Chamot (twenty-three to thirty-three hours weekly), Mr. Knox (twenty-three to thirty-three hours weekly), and Mr. Benedict (twenty-three to thirty-three hours weekly)	3	---	---	121

II. Elective Courses—A. Analytical Chemistry

5. Qualitative analysis. Fall and winter. Associate Professor Dennis, Mr. Smith (twenty to forty hours weekly), Mr. Knox (twenty to forty hours weekly), and Mr. Benedict (twenty to forty hours weekly)	5	14	14	---
6. Quantitative analysis Spring. Associate Professor Dennis, Mr. Chamot (twenty-three to thirty-three hours weekly), and Messrs. Knox (twenty-				

	DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
			1st Term	2nd Term	3rd Term
	three to thirty-three hours weekly), and Benedict (twenty three to thirty-three hours weekly),	5	---	---	11
7.	Advanced quantitative analysis: inorganic, organic, technical, sanitary, and agricultural. Professor Caldwell, Associate Professor Dennis, Mr. Chamot (twenty-three to thirty-three hours weekly), and Mr. Smith (twenty hours weekly)	1–5	16	10	12
8.	Assaying: lectures and laboratory work. Spring, Mr. Smith	3	---	---	16
9.	Qualitative and quantitative gas analysis: lectures. Winter. Associate Professor Dennis, and Mr. Cushman (five hours weekly)	2	---	9	---
10.	Technical gas analysis: comprising analysis of air, furnace gases, illuminating gas, generator gas, etc. Winter. Associate Professor Dennis, and Mr. Cushman (twenty hours weekly)	3	---	8	---
12.	Spectroscopic chemical analysis and colorimetry, lectures and laboratory practice. Fall. Associate Professor Dennis and Mr. Cushman (twenty-five hours weekly)	3	8	---	---
	B. Agricultural Chemistry				
16.	General course in agricultural chemistry. Professor Caldwell	4	30	25	23
17.	Agricultural chemistry: reading from journals. Professor Caldwell	1	4	4	---
	C. Organic Chemistry				
20.	Organic chemistry: lectures and recitations. Assistant Professor Orndorff	3	12	13	13
21.	Organic chemistry: laboratory work. Assistant Professor Orndorff	3	10	12	10
22.	Special chapters in organic chemistry. Assistant Professor Orndorff	2	8	7	7
23.	Advanced organic chemistry: laboratory work. Assistant Professor Orndorff	3–8	7	7	3
24a.	The coal tar dye-stuffs: lectures. Assistant Professor Orndorff	1	6	4	---
24b.	Stereochemistry: lectures. Spring. Assistant Professor Orndorff	1	---	---	6
24c.	Seminary in organic chemistry: critical reviews and discussions of current theories and assigned topics. Assistant Professor Orndorff	1	4	4	4
	D. Inorganic Chemistry				
25.	History of chemistry. Professor Caldwell	3	4	4	4
27.	Inorganic chemistry: laboratory practice. Associate Professor Dennis	1–10	4	3	5

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
E. Physical Chemistry				
30. Elementary physical chemistry : lectures. Assistant Professor Bancroft	2	5	5	3
31. Advanced physical chemistry : lectures. Assistant Professor Bancroft	2	8	7	5
32. Mathematical chemistry : lectures on the thermodynamic theory of chemical processes ; including the principles of thermodynamics ; the phase-rule ; the chemical equilibria of *n*-variant systems ; electrochemistry ; and the velocities of reactions. Assistant Professor Trevor	3	5	3	3
33. Mathematical chemistry, historical course : a systematic study of the literature of mathematical chemistry. Assistant Professor Trevor	3	1	1	1
34. Electrochemistry ; lectures. Assistant Professor Bancroft	2	2	2	3
38. Physical chemistry, laboratory work : experimental methods, and research work. Assistant Professor Bancroft	1–8	7	9	8
39. Critical reviews of the current literature of physical chemistry. Assistant Professors Trevor and Bancroft	1	7	4	4
F. Miscellaneous Courses				
40. German chemical readings. Winter and spring. Associate Professor Dennis	2	---	6	7
41. French chemical readings. Fall. Mr. Chamot	2	7	---	---
43. Chemistry of food and beverages ; lectures. Fall and spring. Professor Caldwell	2	5	---	5
44. Toxicology ; lectures. Winter. Mr. Chamot	2	---	8	---
Theses for graduation	2	8	8	8
Theses for advanced degrees	2	9	9	9
BOTANY				
I. General Courses				
1. General comparative morphology and physiology of plants : a study of representative plants of the various groups, and of the fundamental principles of plant life and relationship ; lectures, laboratory practice, and demonstrations. Fall and winter. Professor Atkinson (seven hours weekly), and Dr. Durand (seven hours weekly)	3	74	66	---
2. Special morphology of higher plants : studies of seeds, seedlings, and the organs of mature plants ; practice in the identification of species ; laboratory work. Spring. Assistant Professor Rowlee (seven hours weekly), and Mr. Wiegand (seven hours weekly)	3	---	---	62

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
3. Dendrology; lectures; the structure and development of wood; timber and its uses; the diseases of timber. Fall. Professor Atkinson (two hours weekly for four weeks), and Assistant Professor Rowlee (two hours weekly for seven weeks)	2	66		
5. Geographical botany: the distribution of plants over the surface of the earth; practical field studies in plant distribution; also the preparation of an herbarium representing the flora of a limited district. Spring. Assistant Professor Rowlee (two hours weekly)	3			11
6. Exotics: methods of propagation and cultivation of conservatory plants. Professor Atkinson and Mr Shore (fifteen hours weekly)	2	7	6	6
II. Comparative Histology and Phanerogamic Botany				
7. Systematic botany; lectures and laboratory work: a study of the genetic relationships of the phanerogamous orders; and laboratory study of groups illustrating the principles of natural classification. Assistant Professor Rowlee	3	8	8	8
8. Comparative histology of plants: introduction to methods of investigation; preliminary studies of the vegetable cell and its contents; the development of primary tissues; kinds of tissue; comparative study of vascular tissue; secondary thickening. Assistant Professor Rowlee (six hours weekly), and Mr. Wiegand (six hours weekly)	3	7	6	6
III. Comparative Embryology and Cryptogamic Botany				
9. Comparative morphology and embryology; lectures and laboratory work: study of representative groups illustrating the line of evolution of green plants, with particular attention to the development and homologies of sporogenous, reproductive, and embryological organs, with discussions of the chief plant phyla; permanent microscopic preparations made representing series in the liverworts, mosses, ferns, gymnosperms, and angiosperms. Professor Atkinson (six hours weekly), and Dr. Durand (six hours weekly)	3	8	8	7
10. Mycology; lectures and laboratory work: culture methods; study of representative genera of basidio-mycetes, with especial attention to the				

	DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
			1st Term	2nd Term	3rd Term
	structure and characters of certain edible and poisonous mushrooms ; the history and development of the most important parasitic fungi ; general classification, with studies in representative groups and discussions of the phylogeny of the fungi. Professor Atkinson (six hours weekly), and Dr. Durand (five hours weekly)	3	9	7	6
11.	Algology ; lectures and laboratory work : study of fresh water and marine algæ, their classification and development. Fall. Professor Atkinson	2	2	2	1
	IV. Research, Theses, and Seminary				
12.	Research work in comparative histology of plants and in systematic botany. Assistant Professor Rowlee	1–9	10	7	6
13.	Research work in comparative embryology, mycology, algology, and kindred subjects. Professor Atkinson	1–4	11	11	10
14.	Seminary : weekly meetings for the discussion of the current literature of the science, the presentation of assigned topics, and the results of research work. Professor Atkinson and Assistant Professor Rowlee	1	13	13	13
	ENTOMOLOGY AND GENERAL INVERTEBRATE ZOOLOGY				
1.	General course in invertebrate zoology ; lectures and practical exercises. Fall. Professor Comstock	3	31	---	---
2.	Special laboratory course in invertebrate zoology. Spring. Professor Comstock (two hours weekly), and Mr. MacGillivray (two hours weekly)	3	---	---	2
3.	Entomology : lectures on the characteristics of the orders, suborders, and the more important families, with special reference to those of economic importance ; and practical exercises. Professor Comstock	3	---	---	28
4.	Elementary laboratory course in entomology : insect anatomy, classification of insects. Fall and spring. Professor Comstock (eighteen hours weekly), and Mr. MacGillivray (eighteen hours weekly)	3	10	---	10
5.	Advanced laboratory course in entomology. Fall and spring. Professor Comstock and Mr. MacGillivray (each twenty hours weekly)	1–6	15	---	19
6.	Economic entomology. Winter. Mr. Slingerland,	2	---	21	---
8.	Summer course in entomology and general invertebrate zoology ; lectures, field work and laboratory work. Professor Comstock (forty hours weekly), and Mr. MacGillivray (forty hours weekly) ; (attendance 19)				

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
PHYSIOLOGY, VERTEBRATE ZOOLOGY, AND NEUROLOGY				
1. Physiology: thirty-three lectures, demonstrations and practicums. Professor Wilder (five hours weekly), and Dr. Stroud (twenty hours weekly)	3	171	---	---
2. Vertebrate zoology: twenty-two lectures and eleven practicums. Winter. Professor Wilder (three hours weekly), and Dr. Stroud (six hours weekly)	3	---	39	---
3. Neurology. Spring. Professor Wilder (two hours weekly), and Dr. Stroud (four hours weekly). (a) Lectures and practicums	3	---	---	21
Dr. Stroud (four hours weekly). (b) Elective laboratory work	2	---	---	4
4. Histology of the nervous system: laboratory work with weekly lecture or recitation. Spring. Dr. Stroud (fifteen hours weekly)	3	---	---	6
5. Advanced neurology: laboratory work with occasional lectures. Professor Wilder (one hour weekly), and Dr. Stroud (three hours weekly)	1–6	2	---	---
6. Comparative anatomy, or systematic vertebrate zoology: laboratory work. Professor Wilder (two to three hours weekly), and Dr. Stroud (two to eighteen hours weekly)	1–6	2	9	2
ANATOMICAL METHODS AND HUMAN ANATOMY				
1. Anatomical methods and gross anatomy: laboratory work, with weekly lecture or recitation. Fall. Assistant Professor Hopkins	3	19	---	---
2. Advanced anatomy: laboratory work, with weekly lecture; study of the vascular, lymphatic and peripheral nervous systems, and the organs of sense, the eye and ear, of the cat. Winter. Assistant Professor Hopkins	3	---	16	---
3. Human anatomy, and research. Assistant Professor Hopkins	2–6	7	5	8
MICROSCOPY, HISTOLOGY AND EMBRYOLOGY				
1. The microscope and microscopical methods: lectures and laboratory work. Fall. Professor Gage (twenty-six hours weekly), and Dr. Kingsbury (twenty-one hours weekly)	3	42	---	---
2. Vertebrate histology; lectures and laboratory work; elements of the fine anatomy of man and domestic animals; methods of histologic investigation and demonstration. Fall and winter. Professor Gage (twenty-six hours weekly), and Dr. Kingsbury (twenty-one hours weekly)	5	45	42	---
3. Vertebrate embryology; lectures and laboratory				

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance 1st Term	Attendance 2nd Term	Attendance 3rd Term
work: elements and methods of embryology in man, the domestic animals, and amphibia. Spring. Professor Gage (twenty-six hours weekly), and Dr. Kingsbury (twenty-one hours weekly)	3 5	--- ---	--- ---	4 33
4. Research in histology and embryology; lectures and laboratory work. Professor Gage (ten hours weekly), and Dr. Kingsbury (twenty-one hours weekly)	2–10	8	9	10
GEOLOGY, MINERALOGY AND PALÆONTOLOGY				
I. Short Courses				
1. Mineralogy; lectures and laboratory work; for students in civil engineering and architecture. Fall. Assistant Professor Gill (seven hours weekly), and Mr. Morton (five hours weekly).	3	57	---	---
2. Dynamic geology: lectures and laboratory work. Winter. Professor Tarr (one hour weekly), and Mr. Bonsteel (ten and one half hours weekly),	3	---	57	---
3. Economic geology; lectures. Spring. Professor Tarr (one hour weekly), and Mr Bonsteel (eight hours weekly)	3	---	---	42
4. Lithology; lectures and recitations; special attention to building-stones. Assistant Professor Gill	2	---	---	10
II. Elective Courses—A. Geology and Physical Geography				
7. Physical geography; lectures: meteorology, oceanography, and physiographic geology. Professor Tarr	2	21	26	21
8. Laboratory and field course in physical geography. Professor Tarr	1	9	12	9
9. Lecture course in general geology: the general subject treated in its relation to dynamic and physiographic geology: especial attention given to dynamic geology. Professor Tarr.	2	20	19	16
10. Laboratory and field course in geology. Professor Tarr	1	13	12	12
11. Glacial geology; lectures and excursions. Spring. Professor Tarr	3	---	---	7
12. Geological investigation: field and laboratory work, with readings, conferences, excursions, and the preparation of theses. Professor Tarr	2	3	3	3
13. Geological seminary: preparation and reading of theses upon special subjects; abstracts and discussions of current geological literature. Professor Tarr	2	5	5	5
14. Seminary course for teachers: essays and discus-				

	DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
			1st Term	2nd Term	3rd Term
	sions upon questions relating to the teaching of geography in the schools. Winter. Professor Tarr	1	---	5	---
	B. Mineralogy and Petrography				
15.	Mineralogy; lectures and laboratory work. Assistant Professor Gill.	3	9	8	---
16.	Physical Crystallography; lectures and laboratory work. Spring. Assistant Professor Gill.	3	---	---	2
17.	Petrography; lectures and laboratory work. Fall and winter. Assistant Professor Gill	3	5	5	---
18.	Advanced work in mineralogy and petrography: including, from time to time, special courses on crystal structure; crystal growth; mineral synthesis, etc. Assistant Professor Gill	1–3	---	---	3
	C. Palæontology				
22.	Historic geology; treating of the life forms on which geological classification is based; lectures and laboratory work. Fall. Assistant Professor Harris	3	2	---	---
23.	Elementary conchology, recent and fossil; lectures and laboratory work. Winter and spring. Assistant Professor Harris	3	---	4	2
24.	Special work on tertiary invertebrate palæontology: laboratory work. Assistant Professor Harris	3–10	2	3	3
25.	Palæontological drawing. Assistant Professor Harris	1	---	---	2
26.	History of stratigraphic geology and palæontology in America. Assistant Professor Harris	2	3	---	---
	Theses	2	2	2	2
	MILITARY SCIENCE AND TACTICS				
1. 2. 3.	Infantry drill Artillery drill Military signalling for selected detachments } Captain Schuyler	3	474	---	372
4.	Military science; lectures. Winter. Captain Schuyler	2	---	25	---
5.	Voluntary company and Band. Captain Schuyler,	2	---	70	---
	HYGIENE AND PHYSICAL CULTURE				
1.	Required freshman course in hygiene and physical culture; lectures. Fall. Professor Hitchcock	1	276	---	---
5.	Gymnastic exercises for men who are imperatively in need of special physical development, Fall and spring. Mr. Lannigan	2	11	---	21

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
6. Gymnastic exercises; required of freshmen. Winter. Mr. Lannigan	4	---	170	---
7. Gymnastic exercises for women; required of freshmen and sophomores. Miss Canfield	2	97	87	71
COLLEGE OF LAW				
JUNIOR COURSES				
1. Contract. Fall and winter. Professor Woodruff	5	172	148	---
2. Criminal law and procedure. Fall and winter. Professor Pound	3	145	137	---
3. Torts. Fall and winter. Professor Huffcut	4	150	133	---
4. Agency. Spring. Professor Huffcut	4	---	---	126
5. Personal property; real property begun. Fall. Professor W. A. Finch	3	148	---	---
6. Law of persons; including domestic relations. Spring. Professor Woodruff	5	---	---	138
7. Civil procedure. Professor Pound	3	---	---	127
SENIOR COURSES				
1. Wills and administration. Spring. Mr. Newman,	3	---	---	91
2. Bills, notes and checks. Spring. Professor Huffcut	3	---	---	101
3. Civil procedure. Fall. Professor Pound	3	87	---	---
4. Corporations. Spring. Professor Pound	3	---	---	88
5. Real property. Fall. Professor W. A. Finch	3	87	---	---
6. Evidence. Winter. Professor Pound	3	---	89	---
7. Statute of frauds and fraudulent conveyances. Fall and winter. Professor F. M. Finch	2	121	90	---
8. History and evolution of the law. Spring. Professor F. M. Finch	2	---	---	89
9. American constitutional law. Fall. Professor Pound	2	99	---	---
10. International law. Winter. Professor Huffcut	2	---	91	---
11. Carriers. Winter and spring. Professor Woodruff,	2	---	102	102
12. Insurance. Fall. Professor Woodruff	2	105	---	---
13. Equity. Fall and winter. Professor Huffcut	3	112	108	---
14. Patent Law. Mr. Albert A. Walker	---	---	---	193
GRADUATE COURSES				
1. Negligence. Professor Huffcut	2	13	13	13
2. American constitutional law. Professor Pound	2	9	7	---

	DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
			1st Term	2nd Term	3rd Term
	COLLEGE OF AGRICULTURE				
	AGRICULTURE				
1.	Wheat culture; farms and farm buildings; fences and roads; farmyard manures and commercial fertilizers; lectures. Fall. Professor Roberts	5	26	---	---
2.	Inspection of roads, bridges, and farm buildings; agricultural surveys; practice. Fall. Professor Roberts	1	26	---	---
3.	Farm accounts; business customs and laws; swine husbandry; horse breeding; sheep husbandry, including early lamb raising; lectures. Winter. Professor Roberts	5	---	25	---
4.	Judging horses, swine and sheep; practice on farm machinery. Winter. Professor Roberts	1	---	25	---
5.	Farm drainage, plows and plowing; corn, oats, barley, flax, hop, and tobacco culture; grasses and forage plants. Spring. Professor Roberts	5	---	---	23
6.	Practice in fields and shops; draining, surveys and mapping. Spring. Professor Roberts	1	---	---	21
9.	Animal industry: principles of breeding and feeding; care, selection, and management of dairy and beef cattle; lectures and practice. Winter. Assistant Professor Wing	2-4	---	23	---
10.	Dairy husbandry: milk and butter; lectures and practice. Fall. Assistant Professor Wing	4	21	---	---
11	Principles of breeding and feeding of domestic animals; effect of food upon development; origin and peculiarities of the different breeds; special course for veterinary students; lectures. Spring. Professor Roberts	2	---	---	4
12.	Seminary. Professor Roberts	1	2	3	2
16.	Poultry: feeding, management and history of breeds; construction of henneries, incubators, and brooders; lectures. Winter. Assistant Professor Wing	2	---	16	---
17.	Practice in running incubators and brooders; judging fowls; caponizing. Winter. Assistant Professor Wing	1	---	5	---
	HORTICULTURE				
1.	Evolution of cultivated plants; lectures and textbook. Fall. Professor Bailey	3	25	---	---
2.	The literature of horticulture (seminary). Fall. Professor Bailey and Mr. Lodeman	1	20	---	---
3.	Greenhouse construction and management; lectures and laboratory work. Fall. Professor Bailey and Mr. Lodeman	2	32	---	---
4.	The botany of cultivated plants (seminary). Winter. Professor Bailey	1	---	21	---

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
5. Pomology; lectures and class exercises. Winter. Professor Bailey	3	---	44	---
6. Propagation of plants; laboratory course. Winter. Professor Bailey and Mr. Walker	2	---	33	---
7. The theory and practice of spraying plants; lectures and demonstrations. Spring. Professor Bailey and Mr. Gould	1	---	---	39
8. Field lessons in pruning, the study of orchards, and plants where they grow. Spring. Professor Bailey	1	---	---	37
1. Handicraft: practical work in forcing houses and gardens, with familiar talks. Professor Bailey,	1–3	16	6	13
NEW YORK STATE VETERINARY COLLEGE				
COMPARATIVE VETERINARY ANATOMY				
1. Osteology, arthrology, and myology of the domestic animals. Assistant Professor Hopkins	2	5	6	4
2. Digestive, vascular, nervous, and other systems of organs of the domestic animals. Assistant Professor Hopkins	2	4	4	4
3. Laboratory work and demonstrations in the zootomy of the domestic animals. Assistant Professor Hopkins	8	9	10	8
GENERAL PHYSIOLOGY OF THE DOMESTIC ANIMALS				
1. General physiology of the domesticated animals; lectures and demonstrations. Fall and winter. Assistant Professor Fish	2	13	13	---
MATERIA MEDICA AND PHARMACY				
1. Recitations, with supplementary lectures. Spring. Assistant Professor Fish	3	---	---	14
2. Laboratory practice in pharmacy. Spring. Assistant Professor Fish	1	---	---	11
MICROSCOPY, HISTOLOGY, AND EMBRYOLOGY				
1 Training in the use of the microscope and in the examination of animal tissues; foundation for pathological, bacteriological, medical and surgical studies. Fall and winter. Professor Gage (twenty-six hours weekly), and Dr. Kingsbury (twenty-one hours weekly)	5	42	43	---
2. Embryology; foundation for teratology, obstetrics, etc. Spring. Professor Gage (twenty-six hours weekly), and Dr. Kingsbury (twenty-one hours weekly)	5	---	---	36

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
PRINCIPLES AND PRACTICE OF VETERINARY SURGERY				
1. Two year course of lectures and recitations. Professor W. L. Williams	5	7	5	---
2. Operative veterinary surgery ; clinics. Professor W. L. Williams	6	6	6	6
WARRANTY AND COMMERCIAL JURISPRUDENCE				
1. Lectures and demonstrations on vices, defects and unsoundness, examinations, diagnosis, warranty, certificates, and commercial jurisprudence of the different genera of domestic animals. Professor W. L. Williams	1	6	6	6
VETERINARY TERATOLOGY AND OBSTETRICS				
1. A course on gestation in the different genera of domestic animals ; normal and abnormal development, teratology, pathology of gestation and parturition ; obstetrics ; and diseases of the young animal. Fall and winter, one hour ; spring, two hours. Professor W. L. Williams	4	---	5	6
PRINCIPLES AND PRACTICE OF VETERINARY MEDICINE				
2. Two year course of lectures and recitations, covering the principles of medicine as applied to the different genera of domestic animals, and practical application of these in the specific diseases of the various organs. Professor Law	3	7	6	6
2. Clinical veterinary medicine. Professor Law	6–12	6	6	6
ZYMOTIC DISEASES AND VETERINARY SCIENCE—STATE MEDICINE				
1. Causes, diagnosis, segregation, occision, disinfection, immunization of zymotic diseases of domestic animals ; state control, etc. Professor Law	2	9	9	9
COMPARATIVE BACTERIOLOGY AND PATHOLOGY				
1. Bacteriological methods ; lectures and laboratory work, covering the general subject of bacteria, their life history, their products, their artificial cultures, etc. Fall. Professor Moore (eleven hours weekly), and Mr. Reed (fifteen hours weekly)	2	20	---	---
3. General bacteriology and pathology ; lectures				

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance 1st Term	2nd Term	3rd Term
and laboratory work. Professor Moore (five hours weekly), and Mr. Reed (fifteen hours weekly)	2	17	16	--
4. Advanced bacteriology: the isolation and differentiation of pathogenic and closely related species of bacteria. Spring. Professor Moore (ten hours weekly), and Mr. Reed (twenty hours weekly)	2	---	---	11
5. Pathology of infectious diseases, and meat inspection; lectures and demonstrations. Spring. Professor Moore	1	---	---	12

COLLEGE OF ARCHITECTURE

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance 1st Term	2nd Term	3rd Term
1. Freehand drawing. Fall and winter. Mr Brauner	3	16	13	15
2. Architectural drawing. Fall, two hours; winter and spring, three hours. Mr. Higby	2–3	18	18	15
3. Shades and shadows. Spring. Mr. Higby	3	---	---	12
4. Building materials and construction. Spring. Assistant Professor Martin	3	---	---	15
4a. Shades and shadows. Fall. Mr. Higby	3	14	---	---
5. Water-color drawing. Winter, one hour; spring, two hours. Mr. Brauner	1–2	14	---	13
6. Figure drawing. Winter and spring. Mr. Brauner,	2	---	14	15
7. Working drawings: specifications and details. Assistant Professor Martin	3	13	12	11
8. Applied mechanics. Spring. Professor Babcock	3	---	---	12
9. History of architecture; lectures and drawing: fall, Egyptian, Greek, and Roman; winter, Byzantine and Romanesque; spring, Gothic. Professor Babcock	5	14	15	15
10. India ink rendering. Fall. Mr. Higby	2	10	---	---
11. Pen drawing. Winter and spring. Mr. Harpster,	2	---	12	10
12. Greek and Roman detail. Fall. Mr. Higby	2	9	---	---
13. Advanced building construction. Winter. Assistant Professor Martin	3	---	8	---
14. Junior seminary, Assistant Professor Martin	1	10	9	9
16. Design; fall, five hours: preliminary studies in the application of certain phases of European architecture to American practice; winter, six hours: application of Greek and Roman motives in composition; spring, four hours: studies in Italian and French Renaissance. Associate Professor Osborne	4–6	7	6	6
17. Ornament; lectures and drawing. Professor Babcock	2	7	7	7
18. History of architecture; fall, Renaissance; winter, modern. Professor Babcock	3	20	17	---

	DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
			1st Term	2nd Term	3rd Term
19.	Landscape gardening. Fall. Associate Professor Osborne	1	12	---	---
20.	Contracts. Fall. Associate Professor Osborne	1	11	---	---
21.	Senior seminary. Winter. Associate Professor Osborne	1	---	8	---
22.	Stereotomy. Winter. Mr. Higby	3	---	8	---
24.	Design; fall, nine hours: exercises in Romanesque and Gothic archæology; winter, ten hours: advanced problems in the application of Italian and French classical motives; spring, nine hours: the graduation design (including decoration). Associate Professor Osborne	9-10	11	9	9
25.	Construction problems (in connection with the graduation design). Spring. Assistant Professor Martin	1	---	10	8
26.	Professional practice. Spring. Professor Babcock,	---	---	---	8
27.	Thesis. Winter and spring. Professor Babcock	2	---	2	2
27.	Substitute for thesis; special work	2	---	7	7

COLLEGE OF CIVIL ENGINEERING

	DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	1st Term	2nd Term	3rd Term
1.	Round writing. Mr. Parson	6	3	15	42
2.	Linear drawing and tinting. Fall. Mr. Parson.	3	61	---	---
3.	Descriptive geometry; (a) recitations, Associate Professor Jacoby (ten hours weekly), Mr. Ogden (fourteen hours weekly, fall and winter, and eight hours, spring); and Mr. Lovell (ten hours weekly, fall and winter)	2	259	233	214
	(b) Problems in descriptive geometry. Mr. Comstock (four hours weekly, winter), and Mr. Parson (two hours weekly, fall)	2	31	24	---
4.	Pen topography. Winter. Mr. Parson	3	---	66	---
5.	Land surveying. Mr. Hayford (eight hours weekly, spring), and Mr. Lovell (nine hours weekly, winter)	4	---	40	29
5a.	City surveying. Spring. Mr. Ogden (ten hours weekly), and Mr. Hayford (eight and one half hours weekly)	3	---	---	71
6.	Colored topography. Mr. Parson (six hours weekly)	2	4	8	49
7.	Mechanics of engineering. Professor Church (five hours weekly, fall and winter, eight hours, spring), Assistant Professor Spalding (five hours weekly, spring), Mr. Comstock (eight hours weekly), Mr. Mott (fifteen hours weekly), Mr. Hayford (ten hours weekly, fall, fifteen hours, winter, and five hours, spring)	5	140	155	194
8.	Architectural drawing. Mr. Parson (four hours weekly, winter)	1	---	32	---

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
9. Structural metals. Mr. Comstock (three hours weekly, spring)	2	---	---	40
10. Structural details. Winter. Associate Professor Jacoby	3	---	35	---
11. Highway construction. Spring. Assistant Professor Spalding (two hours weekly)	1	---	---	40
12. Railway location, construction, and economics. Professor Crandall (eleven hours weekly, fall, eight hours, winter, and three hours, spring), and Mr. Lovell (six hours weekly, winter)	4	27	23	27
13. Bridge stresses. Spring. Associate Professor Jacoby (eight hours weekly)	4	---	---	25
13a. Bridge designing. Fall. Associate Professor Jacoby (fourteen hours weekly)	3	22	---	---
14. Topographical practice, etc.; two week's field work in the Cornell University surveys of Central New York; one week office work. Spring. Professor Fuertes, Professor Church, Professor Crandall, and Mr. Comstock (each three hours weekly)	3	---	---	24
14a. Geodetic practice, etc. Professor Crandall (three hours weekly), and Mr. Mott (three hours weekly)	3	---	---	25
15. Spherical astronomy. Fall. Professor Fuertes (twenty hours weekly), Mr. Comstock (fourteen hours weekly), Mr. Hayford (fifteen hours weekly), and Mr. Lovell (fourteen hours weekly)	4	27	---	---
16. Stereotomy and theory of the arch. Fall. Assistant Professor Spalding (eight hours weekly),	3	29	---	---
17. Civil constructions. Fall and winter. Assistant Professor Spalding	3	27	29	---
18. Hydraulics. Fall. Professor Church	4	30	---	---
19. Geodesy. Fall and spring. Professor Crandall (six hours weekly)	2–4	30	---	29
20. Theory of oblique arches, masonry designs, and stone cutting. Winter. Assistant Professor Spalding (six hours weekly)	3	---	21	---
21. Hydraulic and other motors. Fall. Professor Church	3	29	---	---
23. Hydrographic and topographic mapping. Winter. Mr. Parson (four hours weekly)	2	---	18	---
24. Theses. Winter and spring	2	---	23	23
25. Engineering laboratory work. Professor Church (twelve and one half hours weekly, fall and spring, five hours, winter), Professor Crandall (one hour weekly, winter and spring), Assistant Professor Spalding (six hours weekly, winter and spring), Mr. Mott (six hours weekly, fall and winter, five hours, spring), Mr. Hayford (seven and one half hours weekly, winter), Mr. Lovell (five hours weekly, winter), Mr. Ogden (eight hours weekly, fall), Mr. Comstock (five hours weekly, winter and spring)	1–3	33	51	27

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
26. Municipal and sanitary engineering. Spring. Professor Fuertes	4	---	---	24
28. Hydraulic engineering. Winter. Professor Fuertes	3	---	25	---
29. Geodetic office work. Professor Crandall (three hours weekly, spring), and Mr. Comstock (eight hours weekly, winter)	3	---	20	25
33. Special courses for graduates and advanced students. Professor Crandall (ten hours weekly, fall; twelve hours, winter; eight hours, spring), and Mr. Comstock (nine hours weekly, winter and spring)	----	8	17	15
35. Advanced astronomy. Mr. Comstock	2	1	1	1
36. Advanced mechanics. Professor Church	2	1	1	1
37. Advanced geodesy. Winter. Professor Crandall.	2	---	2	---
38. Bridge engineering. Associate Professor Jacoby,	2	8	6	7
39. Railway engineering. Professor Crandall	2	7	7	7
40. Hydraulic engineering. Assistant Professor Spalding	2	3	5	5
41. Sanitary engineering. Mr. Ogden (fall, two hours weekly, winter and spring, with laboratory, ten hours weekly)	2	7	7	12
42. Masonry and foundations. Assistant Professor Spalding	2	5	5	5
SIBLEY COLLEGE OF MECHANICAL ENGINEERING AND THE MECHANIC ARTS				
1. Kinematics and kinetics; lectures and recitations. Assistant Professor Williams (two hours weekly), and Mr. Bruegel (five hours weekly)	2	77	71	70
2. Materials of construction; lectures. Professor Carpenter, Mr. Eldredge and Mr. Houghton	1	80	79	77
3. Machine design; lectures. Associate Professor Barr	2	74	72	72
3a. Machine design (seniors); lectures. Associate Professor Barr	3	69	72	---
4. Electrical engineering; lectures. Professor Ryan	3	81	84	---
5. Steam engines and other motors; thermodynamics and the theory of steam and other heat engines; lectures. Fall. Professor Thurston	5	136	---	---
6. Applied theory of steam and other engines: structure and operation. Winter (five hours) and spring (three hours). Professor Thurston	3–5	---	135	23
7. Steam generation: design, construction, and operation of the steam boiler. Spring. Professor Thurston	2	---	---	29
8. Shopwork; (a) freshmen: woodworking, use of tools, carpentry, joinery, pattern-making, turning; (b) sophomores and juniors: blacksmith-				

	DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
			1st Term	2nd Term	3rd Term
	ing, use of tools, forging, welding, tool-dressing, etc.; (c) juniors and sophomores: foundry work, moulding casting, mixing metals, brass work, etc.; (d) juniors and seniors: machinist's work, use of hand and machine tools, working to form and to gauge, finishing, construction, assemblage, erection. Professor Morris (thirty-six hours weekly), Messrs. Wiseman, Wood, Vanderhoef, Granger, Stanton, Pollay, Starkins, and Head (each fifty-four hours weekly)	3	452	376	342
9.	Freehand drawing; (a) freshmen; (b) pen and ink; (c) decoration, modelling, water-colors. Assistant Professor Cleaves and Messrs. Gutsell, Brauner and Wilson	3	160	149	---
10.	Instrumental drawing. Spring. Assistant Professor Cleaves and Messrs. Brauner and Wilson	3	---	---	89
11.	Mechanical drawing; specials and sophomores. Messrs. J. S. and D. Reid	2	116	113	109
12.	Junior designing and drawing. Assistant Professor H. D. Williams and Mr. Bruegel	2	67	69	70
13a.	Senior designing and drawing. Fall and winter. Professor Ryan (five hours weekly) and Mr. Macomber (fifteen hours weekly)	2	88	78	---
13b.	Senior designing and drawing. Fall and winter. Associate Professor Barr (four hours weekly), and Mr. Adams (ten hours weekly)	2	74	72	---
14.	Mechanical laboratory; (a) lectures; (b) classroom work. Juniors. Professor Carpenter (ten hours weekly), Messrs Preston, Eldredge, Houghton, Shantz, and Roe (each fifteen hours weekly)	3	100	94	95
15.	Mechanical laboratory; lectures, etc. Seniors. Professor Carpenter (five hours weekly) and Messrs. Preston, Eldredge, Houghton, Shantz, and Roe (each fifteen hours weekly)	2	145	150	---
16.	Electrical engineering; graduates. Professor Ryan (two hours weekly) and Mr. Macomber (one hour weekly)	3	6	5	1
18.	Graduate and special work; two lectures weekly. Professor Carpenter	2	40	30	30
19.	Elementary problems in consulting practice; lectures, mechanical laboratory practice, and research. Professor Carpenter (five hours weekly), Mr. Eldredge (spring, fifteen hours weekly)	1-3	45	27	65
20.	History of the development of electrical engineering: lectures; for seniors and graduates. Spring. Professor Ryan	1	---	---	20
21.	Finance of the production and utilization of electrical energy: lectures; for seniors and graduates. Spring. Professor Ryan	1	---	---	54
23.	Inspection tours and reports. Professor Thurston,	1	---	---	---
24.	Naval architecture. Principal Durand	3	11	9	10

DESCRIPTION OF THE COURSE AND THE NAME OF THE PROFESSOR OR INSTRUCTOR	Hours	Attendance		
		1st Term	2nd Term	3rd Term
25. Ship-building and design. Assistant Professor McDermott	5	16	12	10
26. Marine Machinery. Principal Durand	5	16	19	13
27. Advanced naval architecture. Principal Durand,	2	1	1	1
28. Advanced ship design. Assistant Professor McDermott	3	2	2	2
30. Seminary in marine engineering. Principal Durand and Assistant Professor McDermott	1	9	10	9
33. Engine design, etc.; for seniors. Spring. Associate Professor Barr (six hours weekly in drawing room)	1-3	---	---	9
34. Machine tools; for seniors; lectures and drawing. Spring. Associate professor Barr (seven hours weekly)	1	---	---	14
35. Electrical engineering: study of university equipment, local plants, etc. Professor Ryan (two hours weekly) and Mr. Macomber (one hour weekly, spring)	2	11	12	27
36. Finance of engineering and economics of manufacturing establishments; elective. Spring. Professor Thurston	2	---	---	29
37. Electric railways. Fall and winter. Mr. Macomber	1	29	26	---
38. Steam machinery; for juniors. Mr. Adams	---	---	83	---
39. Electrical machinery; for juniors. Mr. Norris	2	85	76	77

APPENDIX XIII

PUBLICATIONS

By the University

The journal of physical chemistry; edited by W. D. Bancroft and J. E. Trevor. Vol. i., no. 1–9, Oct., 1896–June, 1897. Ithaca, N. Y., 1896–97. 9 nos. l. 8°.

The philosophical review; edited by J. G. Schurman and J. E. Creighton. Vol. v., no. 4–vi., no. 3. July, 1896–May, 1897. 2 *m.* New York, 1896–97. 8°.

The physical review; a journal of experimental and theoretical physics; conducted by E. L. Nichols, E. Merritt, and F. Bedell. Vol. iv., July, 1896–May, 1897. 2 *m.* New York, 1896–97. 8°.

Transactions of the Association of Civil Engineers, Cornell University. Vol. iv. 1895–96. Ithaca, N. Y., 1896. 8°.

Proceedings of the Electrical Society of Cornell University. Vol. iv., 1896–97. Ithaca, N. Y. 8°.

Issued also as a supplement to Sibley Jour. June, 1897, vol. xi.

8th annual report of the Agricultural Experiment Station. 1895. Albany, 1896. 8°. *Illus.*

Bulletin of the Agricultural Experiment Station. No. 118–135, July, 1896–June, 1897. 17 nos. 8°. *Illus.*

Teachers' leaflets for use in the rural schools, prepared by the Agricultural Experiment Station of Cornell University. No. 1–7, Dec., 1896–June, 1897. Ithaca, N. Y., 1896-97. 7 nos. 8°. *Figs.*

7th annual report of the Meteorological Bureau and Weather Service of the State of New York, 1895. Albany, 1896. 8°.

New York State Weather Bureau: report. Vol. viii., no. 7–ix., no. 6. July, 1896–June, 1897. *m.* Ithaca, N. Y., 1896 97. 12 nos. 4°.

"Issued in co-operation with the U. S. Department of Agriculture, Weather Bureau. Central office at Cornell University."

New York State Weather Bureau: weather-crop bulletin, issued in co-operation with the U. S. Department of Agriculture, Weather Bureau. Vol. viii., no. 11–ix, no. 10, 4 July, 1896–26 June, 1897. *w.* [Ithaca, N. Y.], 1896–97. 22 broadsides.

By Officers

In the present list are included the titles of books, pamphlets, and signed contributions to periodicals, transactions, etc., published by officers and fellows of the University during the period extending from July 1, 1896, to June 30, 1897, together with a few of earlier date not recorded in former lists.

Adams, E. T. Concerning coil springs. (Sibley Jour., March, 1897, vol. xi., p. 221).

—— Concerning gages. (Amer. Machinist, 1897).

—— Oiling systems for steam engines. (Machinery, Oct., 1896.)

—— The professor in politics. (San Francisco Chronicle, Nov., 1896.)

—— Valve gears [a series of articles]. (Machinery, Nov., 1896,–Feb., 1897).

To be continued.

Albee, E. Gay's ethical system. (Philosophical Review, March, 1887, vol. vi., p. 132.)

—— [Review of] L'année philosophique, 6e année, 1895. (*Same*, March, 1897, vol. vi., p. 186.)

Amsler, W. O. Long distance transmission of power. (Sibley Jour., April, 1897, vol. xi., p. 264.)

—— A reacting indicator. (*Same*, Oct., 1896, vol. xi., p. 7.)

—— A small high speed gasoline motor. (*Same*, March, 1897, vol. xi., p. 226.)

Anderson, L. Why do we plow? [3 articles.] (Rural New Yorker, April, May, 1897. vol. lvi., pp. 258, 273, 292).

Atkinson, G. F. Albert Nelson Prentiss. (Science, 9 Oct., 1896, N. S. vol. iv., p. 523.)

Also in Cornell Magazine, Oct., 1897, vol. ix., p. 19.

—— The Buffalo meeting of the American Association for the Advancement of Science: section G—Botany. (*Same*, 25 Sept., 1896, N. S. vol. iv., p. 429).

—— Damping off [abstract in German]. (Centralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten, 31 Dec., 1895, 2ᵉ Abt., i. Bd., p. 894.)

—— The diseases of cotton. (U. S. Department of Agriculture, Division of Botany. Bulletin, 1896. no. 33, p. 279.)

—— Leaf-spot of pear. (Garden and Forest, 24 Feb., 1897, vol. x., p. 73.)

—— Nectria on currant canes. (*Same*, 27 Jan., 1897, vol. x, p. 34.)

—— The preparation of material for general class use. (Botanical Gazette, May, 1897, vol. xxiii., p. 372.)

—— Some observations on the development of colletotrichum lindemuthianum in artificial cultures [abstract in German]. (Centralblatt für Bakteriologic, Parasitenkunde und Infektionskrankheiten, 29 Feb., (1896, 2ᵉ Abt., ii. Bd. p. 128.)

—— Some problems in sporophyll transformation among dimorphic ferns. (Botanical Gazette, Sept., 1896, vol. xxii., p. 220.)

—— Some tendencies and problems in the evolution of species among parasitic fungi. (Transactions of the Mass. Horticultural Soc., 1896, p. 98.)

Also separately printed.

—— The transformation of sporophyllary to vegetation organs. (Biological lectures delivered at the Marine Biological Laboratory of Wood's Holl, 1895, 1897.)

—— [Review of] Analytic keys to the genera and species of North American mosses; by C. R. Barnes, revised by F. D. Heald. (Science, 26 March, 1897, N. S. vol. v., p. 519.)

—— [Review of] Die Bedingungen der Fortpflanzung bei einigen Algen und Pilsen; von G. Klebs. (*Same*, 26 Feb., 1897, N. S. vol. v., p. 353.)

—— [Review of] A compendium of general botany; by M. Westermaier. (*Same*, 10 July, 1896, N. S. vol. iv., p. 54.)

—— [Review of] Descriptions of American uredineae, I. [by] J. C. Arthur and E. W. D. Holway. (Centrablatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten, 3 Dec., 1895, 2ᵉ Abt., i. Bd., p.,) 830.

—— [Review of] Diseases of plants induced by cryptogamic parasites; an introduction to the study of pathogenic fungi, slime-fungi, bacteria and algae; by K., Freiherr von Tubeuf, Eng. ed. by W. G. Smith. (Science, 30 April, 1897, N. S. vol. v., p. 696.)

—— [Review of] Forcing house miscellanies [by] L. H. Bailey and E. G. Lodeman. (Centrablatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten, 29 Feb., 1896, 2^e Abt., ii. Bd., p. 127.)

—— [Review of] Index desmidiacearum [by] C. F. O. Nordstedt. (Botanical Gazette, March, 1897, vol. xxiii., p. 210.)

—— [Review of] New Iowa fungi [by] I. B. Ellis and E. W. D. Holway. (Centralblatt für Bakteriologie, Parasitenkunde Infektionskrankheiten, 3 Dec., 1896, 2^e Abt., i. Bd., p. 831.)

—— [Review of] New species of fungi [by] C. H. Peck. (*Same*, p. 831.)

—— [Review of] A plum scale in Western New York [by] M. V. Slingerland. (*Same*, 29 Feb., 1896, 2^e Abt., ii. Bd., p. 129.)

—— [Review of] Ripe rot, or bitter rot, of apples; [by] W. B. Alwood. (*Same*, p. 129.)

—— [Review of] A study of North American parasitics exsoasceae [by] Mrs. F. W. Patterson. (*Same*, 3 Dec., 1895. 2^e Abl., i. Bd., p. 826.)

—— [Review of] Winter muskmelons [by] L. H. Bailey. (*Same*, 29 Feb., 1896, 2^e Abt., ii. Bd., p. 130.)

—— *associate editor*. The botanical gazette. Vol. xxii.-xxiii., July, 1896–June, 1897. Chicago, 1896-97. 2v. 8°. *Illus.*

Bailey, L. H. The forcing-book; a manual of the cultivation of vegetables in glass houses. New York, 1897. 16°. pp. xiii + 266. *Photo-engrs.* (Garden-craft series.)

—— The principles of fruit-growing. New York, 1897. 16°. pp. xi + 508. *Illus.* (Rural Science Series.)

—— The survival of the unlike; a collection of evolution essays suggested by the study of domestic plants. New York, 1896. sm. 8°. pp. 515. *Figs.*

—— *Same.* 2d ed. 1897.

—— A children's garden. (Teacher's leaflets, 27 March, 1897, no. 4, p. 29.)

—— Four apple twigs. (*Same*, 1 March, 1897, no. 3, p. 19.)

—— Horticultural education. (Garden and Forest, 28 April, 1897, vol. x., p. 168.)

—— How a squash plant gets out of the seed. (Teacher's leaflets, 1 Dec., 1896, no. 1, p. 1.)

—— The philosophy of species-making. (Botanical gazette, Dec., 1896, vol. xxii., p. 454.)

—— Second report upon extension work in horticulture. (Cornell University Agricultural Experiment Station. Bulletin, Dec., 1896, no. 122, p. 471.)

—— Suggestions for the planting of shrubbery. (*Same*. Sept., 1896, no. 121, p. 437.)

—— The texture of the soil. (*Same*, Aug., 1896, no. 119, p. 405.)

—— Vitaceae. (Gray's synoptical flora of North America, 1896, vol. i., p. 419.)

—— What is nature-study? (Teacher's leaflets. 1 May, 1897, no. 6, p. 49.)

Bailey, L. H., *and* **C. E. Hunn.** Strawberries under glass. (Cornell University Agricultural Experiment Station. Bulletin. April, 1897, no. 134, p. 263.)

Bailey, L. H., *and* **S. D. Willard.** Notes upon plums for western New York. (*Same*, March, 1897, no. 131, p. 169.)

Bailey, L. H., *editor*. Rural science series. New York, 1895-97. 3v. 16°.

Bailey, L. H. *See also* **Duggar, B. M.,** *and* **L. H. Bailey.** Notes upon celery.

Bancroft, W. D., *associate editor*. The journal of physical chemistry. Oct., 1896—May, 1897.

Barr, J. H. Current practice in engine proportions. (Transactions of the Amer. Soc. of Mechanical Engineers, May, 1897.)

Advance copy. To form a part of vol. xviii.

—— Steam turbines, their advantages and disadvantages. (Cassiers Magazine, Sept., 1896, vol. x., p. 373.)

—— The strength of gear teeth. (Sibley Jour., June, 1897, vol. xi., p. 350.)

Bedell, F. The principles of the transformer. New York, 1896. 8°. pp. 416.

—— Admittance and impedance loci. (Proceedings of the Physical Soc. [London], Dec., 1896, vol. xiv., p. 327.)

Also in the Philosophical Magazine, Oct., 1896, p. 300; Physical Review, Sept., 1896, vol. iv., p. 143; Electrical World, 7 Nov., 1896, vol. xxviii., p. 567.

The British Association for the Advancement of Science (Liverpool meeting.) (Physical Review, Nov., 1896, vol. iv., p. 258.)

—— The division of an alternating current in parallel circuits with mutual inductions. (Physical Review, Nov., 1896, vol. iv., p. 247.)

Read at the Liverpool meeting of the British Assoc. for the Advancement of Science, Sept., 1896. Published also in the Electrical Engineer [London], 9 Oct., 1896, p. 409; and abstracts in Engineering [London] 23 Oct., 1896, vol. lxii., p. 522; Electrical World, 28 Nov., 1896, vol. xxviii, p. 664.

—— A new form of transmission dynamometer. (Railroad Gazette, 28 May, 1897, vol. xxix., p. 371.)

Presented at the Hartford meeting of the Amer. Soc. of Mechanical Engineers, May, 1897; to form a part of vol. xviii. of the Transactions. Also in Electricity, 2 June, 1897, vol. xii., p. 325.

—— Supplementary experiments in alternating current problems: study and calibration of a wattmeter. (Sibley Jour., March, 1897, vol. xi., p. 237.)

—— Use of sine-curves in alternating current problems. (Electrical World, 30 Jan., 1897, vol. xxix., p. 176.)

—— The validity of the use of sine-curves in alternating current problems [letter to the editor]. (Electrical Review, 19 Feb., 1897, vol. xl., p. 243.)

—— [Review of] The alternate current transformer; by J. A. Fleming. vol. i. (Physical Review, Nov., 1896, vol. iv., p. 272.)

—— [Review of] Transformers for single and multiphase currents; by Gilbert Kapp. (Physical Review, March, 1897, vol. iv., p. 426.)

Bedell, F. *and* **J. E. Boyd.** Effect of hysteresis and Foucault currents on polar diagrams. (Electrical World, 18 July, 1 Aug., 1896, vol. xviii., pp. 75, 132.)

Including "Note on the effect of odd harmonics upon the virtual values of periodically varying quantities", a paper presented at the Buffalo meeting of the Amer. Assoc. for the Advancement of Science, Aug., 1896.

Bedell, F., *associate editor.* The physical review. July, 1896–May. 1897.

Bennett, C. E. Appendix to Bennett's Latin grammar. 2d ed. Boston, 1897. sm. 8°. pp. xiv. + 232.

—— A Latin composition for secondary schools. Boston, 1896. 16°. pp. vii. + (1) + 164.

—— Reading at sight in elementary Latin teaching. (Educational Review, Oct., 1896, vol. xii., p. 269.)

—— Reading Latin at sight. (Jour. of Pedagogy, June, 1897.)

Address delivered before the Massachusetts High and Classical Teachers' Assoc. at Boston, April 10, 1897.

—— [Review of] Harper's dictionary of classical literature and antiquities. (Educational Review, Jan., 1897, vol. xiii., p. 83.)

—— [Review of] A History of Rome to the death of Caesar, by W. W. How and H. D. Leigh. (Amer. Historical Review, April, 1897, vol. ii., p. 510.)

——, *editor.* M. Tulli Ciceronis Cato Maior de Senectute, with notes. Boston, [1897]. 16°. pp. viii. + 129. (Students' series of Latin classics.)

Bullock, C. J. Introduction to the study of economics. Boston, 1897. sm. 8°. pp. 512.

Burr, G. L. Report as to the meaning of Articles V and VI of the Treaty of Münster. (Report and accompanying papers of the Commission appointed by the President of the United States "to investigate and report upon the true divisional line between the republic of Venezuela and British Guiana," vol. i., p. 71.)

—— Report as to the territorial rights of the Dutch West India Company. (*Same*, vol. i., p. 97.)

—— Report on the evidence of Dutch Archives as to European occupation and claims in Western Guiana. (*Same*, vol. i., p. 119.)

——, *editor.* Extracts from Dutch Archives. (*Same*, vol. ii.)

—— Report upon maps from official sources. (*Same*, vol. iii., p. 119.)

—— On the historical maps. (*Same*, vol. iii., p. 183.)

—— Historical maps showing European occupation in the Orinoco, Essequibo region, 1597–1814. (*Same*, vol. iv.)

—— [Review of] Geschichte des Päpste; Ludwig Pastor. III. (American Historical Review, April, 1896, vol. i., p. 526.)

Caldwell, G. C. A Faculty retrospect. (Cornell Magazine, Dec., 1896, vol. ix., p. 95.)

—— How to conduct field experiments with fertilizers. (Cornell University Agricultural Experiment Station. Bulletin, Feb., 1897, no. 129, p. 139.)

Carpenter, R. C. Experimental engineering, for engineers and for students in engineering faculties. New and revised ed. New York, 1896, 8°. pp. 704.

—— Chimneys for heating plants [discussion]. (Transactions of the Amer. Soc. of Heating and Ventilating Engineers, 1896, vol. ii.. p. 237.)

—— Comparative tests of steam boilers [discussion]. (Transactions of the Amer. Soc. of Mechanical Engineers, 1896, vol. xvii., p. 276.)

—— A draft and pressure guage [discussion]. (Transactions of the Amer. Soc. of Heating and Ventilating, Engineers, 1896, vol. ii. p. 115.)

—— Effect of paint on efficiency of radiators. (*Same*, p. 225.)

—— Hydrometric properties of coals. 8°. pp. 5.

Paper read before the Hartford meeting of Amer. Soc. of Mechanical Engineers. May, 1897. Advance copy. To form a part of vol. xviii. of the transactions.

—— Methods of insulating underground systems of steam piping [discussion]. (Transactions of the Amer. Soc. of Heating and Ventilating Engineers, 1896, vol. ii., p. 136.)

—— Methods of proportioning direct radiation. (Heating and Ventilation, Feb., 1897.)

—— Relative efficiency of ventilation by a chimney and by a fan. (*Same.*)

This and the preceding paper were read at the meeting of the Amer. Soc. of Heating and Ventilating Engineers, 24 Jan., 1897. Published also in Engineering [London], 12 March, 1897.

—— Reliability of throttling calorimeters [discussion]. (Transactions of the Amer. Soc. of Mechanical Engineers, 1896, vol. xvii., pp. 160, 193.)

—— Ventilation of building, [series of articles consisting of a translation of Pictet, Traité de chaleur, with notes and remarks]. (Heating and Ventilation, July, 1896–May, 1897.)

Cavanaugh, G. W. Food preservatives and butter increasers. (Cornell University Agricultural Experiment Station. Bulletin, July, 1896, no. 118, p. 399.)

— How a candle burns. (Teacher's leaflets, 1 Jan., 1897, no. 2, p. 9.)

Child, C. D. The effect of the density of the surrounding gas on the discharge of electrified metals by X-rays. (Science, 21 May, 1897, N. S. vol. v., p. 791.)

——, *and* **O. M. Stewart.** The most sensitive arrangement of a Wheatstone bridge, with special reference to the bolometer. (Physical Review, May, 1897, vol. iv., p. 502.)

Church, I. P. Notes and examples in mechanics, with an appendix on the graphical statics of mechanism. 2d ed., revised and enlarged. New York, 1897. 8°. pp. 167. 178 *figs.*

Clinton, L. A. The moisture of the soil and its conservation. (Cornell University Agricultural Experiment Station. Bulletin, Aug., 1896, no. 120, p. 417.)

—— Articles in the Farm and Fireside:

College student,—Exterminating live-for-ever,—Value of peat, 15 July, 1896; The round or tub silo,—Oats and silage, 15 Sept., 1896.

—— Articles in the Rural New Yorker, Sept., 1896—May, 1897, vol. lv., lvi.:

Tar and cement for silo, 5 Sept., p. 593; Drainage water in cisterns, 26 Sept., p. 641; Preparing land for winter, 10 Oct., p. 673; The tub silo, 17 Oct., p. 687; Gas tar on shingle roofs,—Making a pasture on the Lake shore, 31 Oct., p. 721; Silo or shredder for the corn, 7 Nov., p. 737; Success in early lamb raising,—A muskrat-proof dam, 14 Nov., pp. 750, 753; A pump to help the pipe, 28 Nov., p. 785; Sugar beets: home made syrup, 12 Dec., p. 816; A plan for a basement barn,—Three balanced rations, short of roughage,—Early lambs again, 26 Dec., pp. 849, 851; Making the tub silo,—Cheap water works for farm houses, 2 Jan., p. 5; A ration for fattening steers, —How hens are fed at Cornell, 16 Dec., pp. 36, 37; A dry nurse for lambs,—Cement pipes not satisfactory, 23 Jan., p. 53; Shall we chop up the hay?—A milk ration with brewers' grain,—Ensilage for sheep,—Cost of making butter,—Cement pipes not satisfactory,—Size of a tub silo,—Cutting corn fodder by hand, 30 Jan., pp. 68, 69; Plans for a basement barn,—Millet meal,—Ration for young calves, 6 Feb., pp. 83, 95; A water-tight reservoir,—Beans for stock feed, 13 Feb., p. 100; The hay of a ration,—Sugar beets and beet pulp for cattle, 20 Feb., p. 126; Pasture for twenty-five hogs, 6 March, p. 166; Fattening veal calves,—Building a tub silo,—A balanced ration for cows, 13 March, pp. 173, 186; Keeping cream sweet,—Balanced ration with alfalfa and sugar beets,—How fine to cut ensilage,—Capacity of a silo, 20 March, p. 202; Grass for a permanent pasture,—Rape for sheep pasture,—Kaffir corn and teosuite in New York,—How to feed gluten meal, 27 March, p. 27; Ensilage cut with shredder, 10 April, p. 253; Silos and ensilage notes, 17 April, p. 270; Sand vetch and giant spurry, 24 April, p. 281; A roof of third pitch,—Winding barbed wire, 15 May, p. 324; Making a pond in gravel,—Plank or cement floor,—Draining a wet cellar,—Bad smell in water,—Real value of the silo, 22 May, pp. 324, 340, 341, 357.

Clinton, L. A. *See also* **Roberts, I. P.,** *and* **L. A. Clinton.**

Comstock, J. H. Insect life. New York, 1896. 8°. pp. iv.+349. 6 *plates* and 252 *wdcts.*

Corson, H., *editor.* Selections from Chaucer's Canterbury tales (Ellesmere text); edited, with introduction, notes, and glossary, by Hiram Corson. New York, 1896. 16°. pp. liv.+277.

212520

Creighton, J. E. Is the transcendental Ego an unmeaning conception? (Philosophical Review, March, 1897, vol. vi., p. 162.)

—— Mr. Gladstone and Bishop Butler. (Book reviews, Jan., 1897, vol. iv., p. 255.)

—— [Review of] Die Urtheilsfunction; von W. Jerusalem. (Philosophical Review, Sept., 1896, vol. v., p. 536.)

—— *translator.* Lectures on human and animal psychology, by W. Wundt; translated by J. E. Creighton and E. B. Titchener. 2d and revised ed. London, 1896. 8°. pp. 470.

—— *American editor.* Kant-Studien. Bd. i. Heft 2—ii., Heft. 1, 1896-97.

—— *associate editor.* The Philosophical review. July, 1896—May, 1897.

Crum, F. S. The birth-rate in Massachusetts, 1850-90. (Quarterly Jour. of Economics, April, 1897, vol. xii., p. 248.)

Dennis, L. M. The rare elements. (Mineral Industry of the United States, 1897, vol. vi.)

—— Ueber die Trennung des Thoriums von den anderen seltenen Erden durch stickstoffwasserstoffsaures Kalium. (Zeitschrift für anorganische chemie, 1896, Bd. xiii., p. 412.)

Also in Jour. of the Amer. Chemical Soc., Nov., 1896, vol. xviii., p. 947.

Dennis, L. M., *and Miss* **M. Doan.** Some new compounds of Thallium. (Jour. of the Amer. Chemical Soc. Nov., 1896, vol. xviii., p. 970.)

Dennis, L. M., *and* **A. E. Spencer.** Zirconium tetraiodide. (Jour. of the Amer. Chemical Soc., Aug., 1896, vol. xviii., p. 673.)

Duggar, B. M. Another injurious leaf-spot of pear. (Proceedings of the Western N. Y. Horticultural Society, 1897, p. 103.)

—— On a bacterial disease of the squash-bug (*anasa tristis*). (Bulletin of the Illinois State Laboratory of Natural history, Dec. 1896, vol. iv., p. 340.)

——, *and* **L. H. Bailey.** Two destructive celery blights. Pt. i. (Cornell University Agricultural Experiment Station. Bulletin, March, 1897, no. 132, p. 201.)

Durand, E. J. A disease of currant canes. (Cornell University Agricultural Experiment Station. Bulletin, Feb., 1897, no. 125, p. 23.)

Durand, W. F. Determination of the current curve corresponding to any form of alternating electromotive force in a circuit without iron. (Sibley Jour., Feb. 1897, vol. xi., p. 182).

—— Electricity on shipboard. (Proceedings of the Electrical Soc. of Cornell University, 1896-97, vol. iv., p. 1.)

The Proceedings, are also issued as a supplement to Sibley Jour., June, 1897, vol. xi.

—— Graphical determination of the index of the power according to which one quantity varies relative to another. (Jour. of the Franklin Institute, March, 1897, vol. cxliii., p. 188.)

—— Integral curves. (Sibley Jour., Jan., 1897, vol. xi., p. 143.)

—— A method of determining a continuous record of the performance of a marine engine. (Jour. of the Amer. Soc. of Naval Engineers, Jan., 1897, vol. ix., p. 1.)

—— Note on different forms of the entropy function. (Physical Review, Jan., 1897, vol. iv., p. 343.)

—— The variation of steam engine economy with change of load. (Amer. Electrician, 1896, vol. viii., no. 2, p. 44.)

—— [Review of] Higher mathematics, a text-book for classical and engineering colleges; edited by M. Merriman and R. S. Woodward. (Physical Review, March, 1897, vol. iv., p. 416.)

Elmer, H. C. Use of moods in relative clauses. (Appendix to Bennett's Latin Grammar. 1896. p. 210.)

Emerson, A. Catalogue of the Henry W. Sage collection of casts from antique sculpture. Ithaca, 1896. 8°. pp. 77.

—— The dimensions of Athena Parthenos [note appended to article by Miss A. L. Perry]. (Amer. Jour. of Archæology, April, 1896, vol. xi., p. 346.)

—— Homeric art. (Chautauquan, March, 1897, vol. xxiv., p. 635.)

—— The Mycenæan civilization [Review of Tsountas' and Manatt's Mycenæ.] (Independent, 18 June, 1897.)

—— On Mount Pindus. (Independent, 18 June, 1897.)

—— Why silver is cheap. (Ithacan, 8 April, 1897.)

Fish, P. A. Leeches; a histological investigation of two cases of an equine mycosis, with an historical account of a supposed similar disease called Bursattee, occurring in India. (Annual report of the U. S. Bureau of Animal Industry, 1895-96, vol. xii.-xiii., p. 229.)

—— Neutral red in histology and bacteriology. (Amer. Veterinary Review, 1896, vol. xx., p. 626.)

—— A note on the cerebral fissuration of the seal (phoca vitulina). (Jour. of Comparative Neurology, March, 1896, vol. vi., p. 15.)

—— Notes on technique. (Transactions of the Amer. Microscopical Soc., 1896, vol. xviii., p. 287.)

—— Zoophily versus homophily. (*Same*, p. 142.)

—— *and* **V. A. Moore.** A report on rabies in Washington, D. C. (Annual report of the U. S. Bureau of Animal Industry, 1895-96, vol. xii.-xiii., p. 267.)

Gage, S. H. The microscope and microscopical methods. 6th ed. Ithaca, N. Y., 1896. 8°. pp. viii.+165. *Figs.*

Part i. of The microscope and histology.

—— Courses of histology and methods of conducting them. (Proceedings of the Amer. Microscopical Soc., 1897, vol. xviii., p. 299.)

—— Physiology in the schools. (Science, 10 July, 1896, N. S. vol. iv., p. 29.)

Paper presented at the 34th University Convocation of the State of New York, June 24, 1896.

—— The purpose of the New York State Science Teachers' Association and the work it hopes to accomplish; presidential address before the Association, Dec. 29, 1896. (*Same*, 19 March, 1897, N. S. vol. v., p. 458.)

—— Zoology as a factor in mental culture. (*Same*, 24 Aug., 1896, N. S. vol. iv., p. 207.)

Address before the department of Natural Science Instruction of the National Education Association, July 10, 1896.

Hammond, W. A. Barthélemy-Saint-Hilaire. (Philosophical Review, March, 1896, vol. v., p. 220.)

—— Positivism and the history of philosophy. (Dial, 1 May, 1897, vol. xxii., p. 277.)

—— [Review of] Histoire de la philosophie atomistique; by L. Mabilleau. (Philosophical Review, Sept., 1896, vol. v., p. 531.)

—— [Review of] The metaphysical basis of Plato's ethics; by A. B. Cook. (*Same*, March, 1897, vol. vi., p. 212.)

—— [Review of] Plato's Republic, edited by Jowett and Campbell. (*Same*, July, 1896, vol. v., p. 442.)

—— [Review of] The school of Plato; by F. W. Bussell. (New World, June, 1897, vol. vi., p. 370.)

Harris, G. D. Eocene stages of Georgia. (Amer. Geologist, Oct., 1896, vol. xviii., p. 236.)

—— An imaginary fleet. (Science, 9 April, 1897, N. S. vol. v., p. 586.)

—— New and interesting eocene mollusca from the Gulf States. (Proceedings of the Academy of Natural Sciences, 1896, vol. xlviii, p. 470.)

——, *editor*. Bulletins of American paleontology. No. 5–9. Ithaca, N. Y., 1896–97. 5 nos. 8°. *Illus.*

v. A reprint of the palæontological writings of Thomas Say, with an introduction by G. D. Harris.

vi. The relation of the fauna of the Ithaca group to the faunas of the Portage and Chemung, by E. M. Kindle.

vii. A bibliography of the geological, mineralogical, and paleontological literature of Virginia, by T. L. Watson.

viii. Notes on eocene mollusca, with descriptions of some new species, by T. H. Aldrich.

ix. The lignitic stage, by G. D. Harris.

——, *translator*. The geology of Chiapas, Tobasco and the Peninsula of Yucatan, by C. Sapper; translated by C. J. Mawry and G. D. Harris. (Jour. of Geology, Nov., 1896, vol. iv., p. 938.)

Hopkins, G. S. The heart of some lungless salamanders. (Amer. Naturalist, 1 Oct., 1896, vol. xxx., p. 829.)

Howe, H. C. Rags and tatters from the verse of H. C. Howe. [Ithaca, N. Y., 1897.] 8°. pp. 48.

Privately printed.

—— Cornell. (Frank Leslie's Popular Monthly, Dec., 1896.)

—— For arbitration. (Boston Evening Transcript, 1 March, 1897.)

—— The homeward voyage of the Mary Ann. (Overland monthly, Feb., 1897, vol. xxix., p. 192.)

Also in the North German Lloyd Bulletin.

—— The Hon. Henry W. Sage. (Cornell Era, 30 Jan., 1897, vol. xxix., p. 186.)

—— The peace of Europe. (Boston Evening Transcript, 13 Nov., 1896.)

—— Pessimé.—Optimé. (Lotus, Nov., 1896, vol. ii., p. 247.)

Also in Cornell Era., 5 Dec., 1896, vol. xxix., p. 125.

—— A proposition for a school of poetry. (Cornell Magazine, Nov., 1896, vol. ix., p. 66.)

—— The rain upon the roof. (Lotus, June, 1896, vol. iii.)

Jacoby, H. S. Outlines of descriptive geometry. Pt. iii. Ithaca, 1897, 8°. pp. ii.+39.

Contents :—iii. On shades and shadows.——On perspective.

The method of teaching perspective to engineering students. (Proceedings of the Soc. for the Promotion of Engineering Education, 1896, vol. iv., p. 216.)

——, *joint author*. Graphic statistics, by M. Merriman and H. S. Jacoby. 3d ed., revised and enlarged. New York, 1897. 8°. pp. viii.+234. 138 *figs.* and 6 *folding plates.*

enks, I. W. Training for citizenship. [Chicago, 1897.] 8°. pp. 201.

First supplement of the second Year-book of the National Herbart Soc. Also, discussion of above in the Second supplement.

—— What the incoming Congress ought to accomplish. [Review of Reviews, Jan., 1897, vol. xv., p. 51.)

Articles in Palgrave's Dictionary of political economy :

Vol. i. Homestead and exemption laws in the United States.

Local government in the United States.

Monopolies in the United States.

[Review of] American highways ; a popular account of their construction and of the means by which they may be bettered ; by N. S. Shaler. (Citizen, April, 1897.)

——, *editor*. Handbook of the American Economic Association, 1897, with report of the ninth annual meeting. New York, 1897. 8°. p. 162.

Jones, G. W. Five-place logarithms. Ithaca, 1896. 8°. pp. 64.

Kingsbury, B. F. The encephalic evaginations in ganoids. (Jour. of Comparative Neurology, April, 1897, vol. vii., p. 37.)

—— The structure and morphology of the oblongata in fishes. (*Same*, p. 1.)

Koch, T. W. Dante in America. (*In* Dante Society, *Cambridge, Mass.* Fifteenth annual report. 1896. pp. 1–150.)

Also separately printed, Boston, 1896. 8°. pp. 150.

Lee, D. C. Syllabus for extempore speaking : studies in American history, government and sociology. Ithaca, N. Y., 1897. 8°. pp. 19.

—— Syllabus for extempore speaking : studies in politics and education. Ithaca, N. Y., 1896. 8°. pp. 25.

Lodeman, F. E. Le pas Saladin, an Old French poem of the third crusade. Baltimore, 1897. 4°. pp. 27.

Text, edited with an introduction and a study of the dialect. Thesis presented to the Faculty of Cornell University for the degree of Doctor of Philosophy. Deprinted from Modern Language Notes 1897, vol. xii.

McMahon, J. Hyperbolic functions. (Higher mathematics. edited by M. Merriman and R. S. Woodward. 1896.)

—— On the hypothesis of the successive transmission of gravity, and the possible perturbative effect on the earth's orbit [abstract]. (Bulletin of the Amer. Mathematical Soc., Oct., 1896, vol. iii., p. 8.)

Macomber, I. J. Electric station design. (Proceedings of the Electrical Soc. of Cornell University, 1896–97, vol. iv., p. 17.)

The Proceedings are also issued as a supplement to Sibley Jour., June, 1897, vol. xi.

—— *See also* **Ryan, H. J.,** *and* **I. J. Macomber.** The design of a 100 K. W. 500 volt power generator.

Merritt, E. G. Electric waves and oscillations: (Proceedings of the Electrical Soc. of Cornell University, 1896–97, vol. iv., p. 40.)

The Proceedings are also issued as a supplement to Sibley Jour. June, 1897. vol. xi.

—— The influence of light upon the discharge of electrified bodies. (Science, 11, 18 Dec., 1896, N. S. vol. iv., pp. 853, 890.)

—— The trace of the gyroscopic pendulum. (Physical Review, Jan., 1897, vol. iv., p. 336.)

—— [Review of] The magnetic circuit; by H. duBois, translated by Dr. Atkinson. (*Same*, May, 1897, vol. iv., p. 511.)

—— [Review of] A manual of physics'; by W. Peddie. 2d ed. (*Same*, p. 510.)

—— [Review of] Physikalische Technik; by J. Frick. 6th ed., revised by O. Lehman. (*Same*, Jan., 1897, vol. iv., p. 348.)

—— [Review of] The principles of physics; by A. P. Gage. (*Same*, Sept., 1896, vol. iv., p. 159.)

——, *associate editor*. The physical review. July, 1896-May, 1897.

Moler, G. S. A synchronous motor for determining the frequency of an alternating current. (Physical Review, March, 1897, vol. iv., p. 411.)

Also in Sibley Jour., March, 1897, vol. xi., p. 232.

Moore, V. A. Infectious leukaemia in fowls, a bacterial disease frequently mistaken for fowl cholera. (Annual report of the U. S. Bureau of Animal Industry, 1895–96, vol. xii.-xiii., p. 185.)

—— The influence of animal experimentation upon agriculture. (Proceedings of the 17th meeting of the Soc. for the Promotion of Agricultural Science, 1896, p. 22.)

—— The nature and prevention of entero-hepatitis in turkeys. (Cultivator and Country Gentleman, 25 March, 1897, vol. lxii., p. 229.)

—— Outbreak of a non-specific disease among swine. (Annual Report of the U. S. Bureau of Animal Industry, 1895–96, vol. xii.-xiii., p. 220.)

—— Preliminary investigations concerning the number and nature of bacteria in freshly drawn milk. (*Same*, p. 261.)

—— *and* **C. F. Dawson.** Tuberculosis in swine; the nature of the disease, with a report of three cases. (*Same*, p. 207.)

—— *See also* **Fish, P. A.** *and* **V. A. Moore.** A report on rabies in Washington, D. C.

Murray, D. A. Introductory course in differential equations for students in classical and engineering colleges. New York, 1897. sm. 8°. pp. xv.+234.

Murray, L. A. The measurement of polyphase power. (Sibley Jour., Dec., 1896, vol. xi., p. 107.)

—— Rolla C. Carpenter. (*Same*, May, 1897, vol. xi., p. 297.)

—— Screws and screw making. (*Same*, Nov. 1896, vol. xi., p. 37).

—— Tests of railway insulators. (*Same*, Oct., '96, vol. xi., p. 3.)

——, *editor*. Proceedings of the Electrical Society of Cornell University, 1896–97.

Needham, J. A. Libellula deplanata of Rambur. (Canadian Entomologist, June, 1897, vol. xxix., p. 144.)

—— On rearing dragon-flies. (*Same*, April, 1897, vol. xxix., p. 94.)

—— Out-door studies [a series of articles]. (Popular Educator, Sept., 1896–June, 1897.)

Nichols, E. L. The outlines of Physics; an elementary text-book. New York, 1897. 8°. pp. xi. + 452.

—— On the influence of radiating power upon the efficiency of a lamp filament. (Electrical World, 2 Jan., 1897, vol. xxix., p. 23.)

—— Random notes upon the application of electricity to railways in Switzerland. (Proceedings of the Electrical Soc. of Cornell University, 1895–96, vol. iii., p. 27.)

—— The teaching of physics and chemistry in the secondary schools [discussion]. (Science, 19 March, 1897, N. S. vol. v., p. 464.)

—— [Review of] Die Spectralanalyse, J. Landauer. (Physical Review, Sept., 1896, vol. iv., p. 158.)

Nichols, E. L., *and* **W. S. Franklin.** The elements of physics; a college text-book. Vol. ii., iii. New York, 1897. 2v. 8°.

Contents:—ii. Electricity and magnetism.—iii. Light and sound.

Nichols, E. L., *and* **J. A. Clark.** The influence of a static charge upon the surface tension of water. (Physical Review, March, 1897, vol. iv., p. 375.)

Nichols, E. L., *and* **F. J. A. McKittrick.** An experimental study of electromotive forces induced on breaking a circuit. (Transactions of the Amer. Institute of Electrical Engineers, 1896, vol. xiii., p. 247.)

Nichols, E. L., C. H. Sharp, *and* **C. P. Matthews.** Standards of light [preliminary report of the sub-committee of the Institute]. (*Same*, p. 136.)

Norris, H. H. Interaction between armature and field in the direct current dynamo. (Proceedings of the Electrical Soc. of Cornell University, 1896–97, vol. iv., p. 12.)

The Proceedings are also issued as a supplement to Sibley Jour., June, 1897, vol. xi.

See also **Ryan, H. J.,** *and* **H. H. Norris.** Note on the applications of electrical machinery.

Northup, C. S. Alcove papers [articles in the Cornell Magazine, vol. ix.]:

Dr. John Brown, April, 1897, p. 286; Philip Gilbert Hamerton, May, 1897, p. 340; The song of Roland, June, 1897, p. 385.

—— The study of dialect in America. (Cornell Era, 10 Oct., 1896, vol. xxv., p. 42.)

—— Word-list of the Cornell Dialect Society. (Dialect Notes, 1896, pt. ix., p. 411.)

—— [Review of] Abraham Lincoln; by L. W. Allen. (Cornell Magazine, Nov., 1896, vol. ix., p. 93.)

—— [Review of] Composition-Rhetoric; by F. N. Scott and J. V. Denney. (*Same*, May, 1897, vol. ix., p. 353.)

—— [Review of] History of oratory and orators; by H. Hardwicke. (*Same*, Dec., 1896, vol. ix., p. 132.)

—— [Review of] The literary history of the American Revolution, by M. C. Tyler. (*Same*, June, 1897, vol. ix., p. 398).

——, *editor*. The Cornell magazine, Sept. 1896—June, 1897.

Ogden, H. N. Cost of pipe sewers at Ithaca, N. Y. (Engineering News, 13 Aug., 1896, vol. xxxvi., p. 112.)

—— Description of stone arch on Cornell campus. (*Same*, 11 March, 1897, vol. xxvii., p. 158.)

—— House plumbing. (Domestic Engineering, Dec., 1896, vol. xii., p. 61.)

Orndorff, W. R. [Review of] Die chemie im täglichen Leben; von Dr. Lassar-Cohn. (Science, 22 Jan., 1897, N. S. vol. v., p. 156.)

—— [Review of] Commercial organic analysis; by A. H. Allen. (Jour. of Physical Chemistry, April, 1897, vol. i., p. 428.)

—— [Review of] Kurzes Lehrbuch der organischen Chemie; von A. Bernthsen. (Amer. Chemical Jour., Feb., 1897, vol. xix., p. 159.)

——, *and* **C. L. Bliss.** Dianthranol, a dihydroxyl derivative of dianthracene. (*Same*, June, 1896, vol. xviii., p. 453.)

——, *and* **C. B. Moyer.** Naphthalene tetrabromide, $C_{10}H_8Br_4$. (*Same*, April, 1897, vol. xix., p. 262.)

Pillsbury, W. B., *translator*. Introduction to philosophy, by O. Külpe; translated from the German by W. B. Pillsbury and E. B. Titchener. New York, 1897. 12°. pp. x + 256.

Roberts, I. P. The fertility of the land; a summary sketch of the relationship of farm-practice to the maintaining and increasing of the productivity of the soil. New York, 1897. 16°. pp. xvii., p. 415.

—— Articles in the Country Gentleman, July—Dec., 1896, vol. lxi.:

Plowing under corn peas, 20 July, p. 588; enlarging and arranging a farm, 6 Aug., p. 612; corn peas, 20 Aug., p. 646; wheat crops to raise for feeding, 10 Dec., p. 943.

—— Articles in the Rural New Yorker, June, 1896—May, 1897, vol. lv., lvi.:

How to grow oats and peas,—The law of irrigation, 20 June, pp. 415, 417; Two brief horn killing notes, 27 June, p. 432; How to fill the hay mow, 4 July, p. 446; Alfalfa in New York State, 11 July, p. 465; Is it safe to feed smutted oats? 25 July, p. 501; How much hay for a horse?—Outside round silo, 8 Aug., pp. 528, 529; An ice-house of concrete,—Cost of scrub or thoroughbred, 5 Sept., pp. 593, 602; To make a dam water-tight, 3 Oct., p. 657; Millet-hay: how much food for cows? 31 Oct., p. 721; A moss-backed Connecticut pasture, 14 Nov., p. 751; Differences in stable manure,—Breeding for sex, 21 Nov., p. 768, 778; "Stone" and "air-slaked" lime, 26 Dec., p. 849; Horse or mare? 13 Feb., p. 111; Should horses face the light? 13 March, p. 186; Sheep pasture: sweet corn for soiling, 27 March, p. 208; Field beans for green manure—Seeding low land for pasture, 10 April, p. 241; Notes for grass seeding, 1 May, p. 297; Western horses for Eastern farms, 8 May, p. 306; Ensilage for horse-feeding, 21 May, p. 350; Dry earth instead of plaster, 29 May, p. 356.

——, *and* L. A. Clinton. Forage crops. (Cornell University Agricultural Experiment Station. Bulletin, May, 1897, no. 135, p. 269.)

——Potato culture. (*Same*, March, 1897, no. 130, p. 151.)

Rowlee, W. W. The stigmas and pollen of arisaema. (Bulletin of the Torrey Botanical Club, Sept., 1896, vol. xxiii., p. 369.)

—— [Review of] Plants of Monroe County, New York, and adjacent territory; published by the Rochester Academy of Science. (*Same*, Aug., 1896, vol. xxiii., p. 320.)

Ryan, H. J. *and* **H. H. Norris.** Notes on the applications of electrical machinery. Ithaca, N. Y., 1897. 8°. pp. iv.+81. 9 *plates*.

Ryan, H. J. *and* **I. J. Macomber.** The design of a 100 K. W. 500 volt power generator. (Sibley Jour., Jan., 1897, vol. xi., p. 125.)

Schmidt, N. På Wartburg. (Vintersol. Illustered kalender, Stockholm, 1897, vol. v., p. 133.)

—— Syllabus of lectures on the history of Babylonia, Assyria, Susiana, Chaldeæa, Lydia, Media, Persia, and Egypt. Ithaca, N. Y., 1897. 8°. pp. 41.

—— · Was *Bar Nasha* a Messianic title? Boston, 1896. 8°. pp. 18.
Reprinted from the Jour. of Biblical Literature, 1896, vol. xv., p. 36.

—— [Review of] Die Entstehung des deuteronomischen Gesetzes Kritisch und biblisch-theologisch untersucht; von C. Steurnagel. (Amer. Jour. of Theology, April, 1897, vol. i., p. 486.)

Schurman, J. G. Cornell University: 4th annual report of President Schurman, 1895-96. Ithaca, N. Y., 1896. 8°. pp. 79 + lxxii.

—— Cornell's action respecting the A.B. degree. (Jour. of Pedagogy, March, 1897, vol. x., p. 43.)

—— A notable debate. (*Same*, March, 1897, vol. x., p. 56.)

—— [Review of] A history of the warfare of science with theology in Christendom; by A. D. White. (Science, 11 Dec., 1896, N. S. vol. iv., p. 879.)

——, *editor*. The philosophical review. July, 1896–May, 1897.

Seth, J. The educational value of examinations. (Educational Review, Sept. 1896, vol. xii., p. 133.)

—— Is pleasure the summum bonum? (International Jour. of Ethics, July, 1896, vol. vi., p. 409.)

—— The standpoint and method of ethics. (Philosophical Review, May, 1897, vol. vi., p. 275.)

——, *associate editor*. The philosophical review. July, 1896–May, 1897.

Sharp, C. H. The use of accumulators in central station practice. (Proceedings of the Electrical Society of Cornell University, 1896 97, vol. iv., p. 27.)

The Proceedings are also issued as a supplement to Sibley Jour., June, 1897, vol. xi.

—— *See also* Nichols, E. L., C. H. Sharp, *and* C. P. Matthews. Standards of light.

Shore, R. Cycas evoluta. (Amer. Gardening, Jan., 1897, vol. xviii., p. 1.)

—— Plants suitable for decoration. (*Same*, 13 March, 1897, vol. xviii., p. 190.)

Slingerland, M. V. The agrotis subgothica of Haworth, again. (Canadian Entomologist, Dec., 1896, vol. xxviii., p. 295.)

—— The army-worm does battle. (Rural New Yorker, 25 July, 1896, vol. lv., p. 495.)

—— The army-worm in New York. (Cornell University Agricultural Experiment Station. Bulletin, April, 1897, no. 133, p. 233.)

—— The biography of a bed-bug [3 articles]. (Rural New Yorker, 7-21 Nov., 1896, vol. lv., pp. 742, 758, 774.)

—— The blueberry Span-worm (diastictis inceptaria) and the bumble flower-beetle (euphoria inda). (Canadian Entomologist, March, 1897, vol. xxix., p. 49.)

—— Borers in fruit and shade trees. (Rural New Yorker, 22 Aug., 1896, vol. lv., p. 556.)

—— The carpet beetle. (*Same*, 29 Aug., 1896, vol. lv., p. 582.)

—— The crinkled flannel moth (megalopyge crispata, Packard). (Canadian Entomologist, Jan., 1897, vol. xxix., p. 1.)

—— The currant-stem girdler and the raspberry-cane maggot. (Cornell University Agricultural Experiment Station. Bulletin, Feb., 1897, no. 126, p. 41.)

—— Green fruit worms. (*Same*, Dec., 1896, no. 123, p. 509.)

—— Notes on injurious insects: answers to correspondents [80 articles]. (Rural New Yorker, June 15, 1896-June 15, 1897, vol. lv., lvi.; Ithaca Daily Jour., 22 June, 1896; Fruit, July, 1896, vol. viii., p. 8; Practical Farmer, 15 May, 1897, vol. lxxiv., p. 327.)

—— The pistol-case-bearer in western New York. (Cornell University Agricultural Experiment Station. Bulletin, Jan., 1897, no. 124, p. 5.)

—— Recent work among the insect foes of the horticulturist. (Michigan Fruit Grower, 11 Dec., 1896, vol. v, p. 8.)

Read at the 26th annual session of Michigan State Horticultural Soc., Grand Rapids, Dec. 2, 3, 1896.

—— Report, as chairman of committee on entomology. (Proceedings of the Western New York Horticultural Soc., 1897, vol. xlii., p. 22.)

—— Report of the entomologist. (Cornell University Agricultural Experiment Station. Annual report for 1895, p. 16.)

—— Will the army-worm come this year? (Amer. Agriculturist, 8 May, 1897, vol. lix., p. 582.)

Smith, F. D. The Bald Mountain mining district, Wyoming. (Engineering and Mining Jour., 5 Dec., 1896, vol. lxii., p. 535.)

Snyder, V. Criteria for nodes in Dupin's cyclides, with a corresponding classification. (Annals of Mathematics, June, 1897, vol. xi., p. 140.)

—— Lines common to four linear complexes. (Bulletin of the Amer. Mathematical Soc., April, 1897, 2 S. vol. iii., p. 247.)

Spalding, F. P. Hydraulic cement; its properties, testing, and use. New York, 1897. 12°. pp. 265.

—— The seminar method of instruction as applied to engineering subjects. (Proceedings of the Soc. for the Promotion of Engineering Education, 1896, vol. iv.)

Stephens, H. M. The Directory, the Consulate, and the Empire. (Chautauquan, June, 1897, vol. xxv., p. 252.)

—— The French Revolution. (*Same*, Dec., 1896, vol. xxiv., p. 281.)

—— History in the secondary schools. (Proceedings of the National Educational Assoc., 1896, p. 623.)

—— Marat: the friend of the people. (Pall Mall Magazine, Sept., Oct., 1896, vol. x., pp. 74, 201.)

—— [Reviews of] The growth of British policy, by Sir J. R. Seeley; the history of the foreign policy of Great Britain, by M. Burrows. (Amer. Historical Review, July, 1896, vol. i., p. 721.)

—— [Reviews of] Joan of Arc; by F. C. Lowell; Personal recollections of Joan of Arc, by S. L. Clemens; Joan of Arc, her life and death, Mrs. Oliphant. (New World, Sept., 1896, vol. v. p. 595.)

—— [Review of] Mémoires de Jean François Thoury. Amer. Historical Review, July, 1896, vol. i., p. 725.)

—— [Reviews] Personal reminiscences of the wars of Napoleon: Memoirés du Général Baron Roch Godart (1792–1815) publiés par J. B Antoine; Souvenirs de guerre du Général Baron Pouget, publiés par Mme. de Boisdeffre; Mémoires du Général Lejeune, publiés par G. Bapst; Journal du Général Fantin des Odoards. (Amer. Historical Review, July, 1896, vol. i., p. 726)

——, *associate editor.* American Historical Review. July, 1896–April, 1887.

Stewart, O. M. On the absorption of the extraordinary ray in uniaxal crystals. (Physical Review, May, 1897, vol. iv., p. 433.)

—— *See also* **Child, C. D.,** *and* **O. M. Stewart.** The most sensitive arrangement of a Wheatstone bridge.

Stroud, B. B. Comparative anatomy of the cerebellum. (Records of the Assoc. of Amer. Anatomists, 1897.)

Read at the meeting of the Association, Washington, 5 May, 1897.

—— Formal (formaldehyde 4% solution); practical experience with formal in the laboratory. (Amer. Naturalist, Jan., 1897, vol. xxxi., p. 92.)

Also separately printed.

—— The name of formal. (*Same*, May, 1897, vol. xxxi., p. 465.)

Also separately printed.

—— On brain preservation. (Records of the Assoc. of Amer. Anatomists, 1897.)

Read at the meeting of the Association, Washington, 5 May, 1897.

—— On the anatomy of the anus. (Mathews' Quarterly Journal of Rectae and Gastro-Intestinal Diseases, Jan., 1897, vol. iv., p. 64.)

Tanner, J. H. Syllabus of lectures on some problems in annuities and insurance, delivered before the students in the College of Law of Cornell University, May, 1897. (Ithaca, N. Y., 1897. 8°. pp. 12.)

Tarr, R. S. Elementary geology. New York, 1897. 8°. pp. xxx.+499. *Plates*, *charts*, and 268 *figs*.

—— Elementary physical geography. 3d ed. New York, 1895, 8°. pp. xxxi.+488. *plates*, *charts*, and 267 *figs*.

—— *Same*, 4th ed. 1896.

—— *Same*, 5th ed. 1897.

—— First book of physical geography. New York, 1897. 12°. pp. xxviii.+368. *Plates*, *charts*, and 198 *figs*.

—— The Arctic Sea ice age as a geological agent. (Amer. Jour. of Science, March, 1897, vol. cxi., p. 223.)

—— Changes of Level in Bermuda Islands. (Amer. Geologist, May, 1897, vol. xix., p. 293.)

—— The Cornell expedition to Greenland. (Science, 9 Oct., 1896, N. S. vol. iv., p. 520.)

—— The Danish colony of Greenland. (Cornell Magazine, Feb., 1897, vol. ix., p. 179.)

—— Difference in the climate of the Greenland and American side of Davis' and Baffin's Bay. (Amer. Jour. of Science, April, 1897, vol. cxi., p. 315.)

—— Evidence of glaciation in Labrador and Baffin Land. (Amer. Geologist, March, 1897, vol. xix., p. 191.)

—— Former extension of Greenland glaciers [discussion : 3 letters]. (Science, 26 Feb., 26 March, 21 May, 1897, N. S. vol. v., pp. 344, 515, 804.)

—— Former extension of Cornell glacier near the Southern end of Melville Bay. (Bulletin of the Geographical Soc. of America, March, 1897, vol. viii., p. 151.)

—— The glaciers of Greenland. (Scientific Amer., 3 April, 1897, vol. lxxvi., p. 216.)

—— Physical geography of New York State. Pts. i., ii. (Bulletin of the Amer. Geographical Soc., 1896, '97, vol. xxviii., p. 99, vol. xxix., p. 16.)

Contents :——i. General physiographic features.—ii. The mountains of the State.

—— Place of the earth sciences in the secondary schools. (Science, 26 March, 1897, N. S. vol. v., p. 498.)

—— Rapidity of weathering and stream erosion in the Arctic latitudes. (Amer. Geologist, Feb., 1897, vol. xix., p. 131.)

—— Valley glaciers of the upper Nugsuak peninsula, Greenland. (*Same*, April, 1897, vol. xix., p. 262.)

Thurston, R. H. Manual of the steam boiler. 5th ed., revised and enlarged. New York, 1896. 8°. pp. 879.

—— The animal as a machine. (North Amer. Review, Nov., 1896, vol. clxiii., p. 607.)

—— The apprenticeship question. (Science, 19 Feb., 1897, N. S., vol. v., p. 299.)

—— Avantages de la surchauffé. (Bulletin de la Soc. d'Encouragement pour l'Industrie, Aug., 1896.)

—— Economies of engineering. (Sibley Jour., Nov., 1896, vol. xi., p. 59.)

—— F. E. Sickels. (Transactions of the Amer. Soc. of Civil Engineers, Aug., 1896.)

—— High pressure steam for marine purposes. (Marine Engineering, April, May, 1897.)

—— History and structure of the steam-engine [serial reprint]. (Railway Magazine, 1897.)

—— Industrial education. (N. Y. Tribune, 14 April, 1897.)

—— Lilienthal, the aviator. (Science, 4 Sept., N. S. vol. iv., p. 303.)

—— Machine-tools. (New Amer. supplement to the Encyclopædia Britannica, 1897. vol. iii., p. 1951.)

—— Marine engines. (*In same*, vol. iv., p. 1992.)

—— The mechanic arts and prosperity. (Baker's Railway Mag., Jan., 1897.)

—— The modern version of the law of supply and demand. (Science, 4 Dec., 1896, N. S. vol. iv., p. 817.)

—— Physical tests of materials. (Digest, Jan., 1897.)

—— The promise and potency of high-pressure steam. (Science, 9 April, 1897, N. S. vol. v., p. 573.)

—— The promise and potency of high-pressure steam, illustrated by the performance of the triple- and the quadruple-expansion experimental engines of Sibley College. (Transactions of the Amer. Soc. of Mechanical Engineers, Dec., 1896.)

To form a part of vol. xviii. of the Transactions. Also in Jour. of the Franklin Institute, Dec., 1896, Jan., 1897, with the title: "The standard efficiency for steam-engines."

—— Rendement de la machine à vapeur. (Bulletin de la Soc. d'Encouragement pour l'Industrie, Oct., 1896.)

—— The "rotary" steam engine. (Scientific Amer., 3 April, 1897, vol. lxxvi., p. 211.)

—— Sir Henry Bessemer; a biographical sketch. (Cassiers Magazine, Sept., Oct., 1896, vol. x., pp. 323, 435.)

—— Speed control in modern steamers [discussion]. (Proceedings of the U. S Naval Institute, 1896, vol. xxii., p. 481.)

—— Standard of steam engine efficiency [discussion]. (Proceedings of the Institution of Civil Engineers, 1896. vol. cxxv., p. 238.)

—— Steam boiler explosions. (Proceedings of the Electrical society of Cornell University, 1895–96, vol. iii., p. 10.)

—— Steam consumption of small engines. (Engineer [N. Y.] Oct., 1896.)

—— The steam engineering of to-day and of to-morrow. (Electrical Engineer, 6 Jan., 1897, vol. xxiii., p. 14.)

Also abstract: "A comparison of engine efficiencies" in Sibley Jour., March, 1897, vol. xi., p. 233.

—— Superheated steam. (Transactions of the Amer. Soc of Mechanical Engineers, 1896, vol. xvii, p. 488.)

—— Superheated steam in steam engines. (Science, 27 Nov., 1896, N. S. vol. iv., p. 778.)

—— Tests of American rifles. (Engineer [London], 5 June, 1896, vol. lxxxii., p. 560.)

Summary of the report of the N. Y. State Commission to test rifles of which Prof. Thurston was chairman.

—— Thermal efficiency of steam engines [discussion]. (Proceedings of the Institution of Civil Engineers, 1896. vol. cxxv., p. 241.)

—— Victor Dwelshauvers-Dery, a biographical sketch. [Cassiers Magazine, Jan., 1897, vol. xi., p. 172.)

—— What is the fittest education? (Public Opinion, 21 May, 1896, vol. xx., p. 662.)

—— [Review of] Auto-cars; by D. Farman. (Science, 25 Dec., 1896, N. S. vol. iv., p. 957.)

—— [Review of] Étude de huit essais de machine á vapeur; par V. Dwelshauvers-Dery. (*Same*, 22 Jan., 1897, N. S. vol. v., p. 153.)

—— [Review of] The gas and oil engine; by D. Clerk. (*Same*, 16 Oct., 1896, N. S. vol. iv., p. 578.)

—— [Review of] Motive power and gearing for electrical machinery; by E. T. Carter. (Physical Review, March, 1897, vol. iv., p. 430.)

——, *associate editor*. Science, a weekly Journal devoted to the advancement of science. July, 1896–June, 1897.

Editor for engineering.

Titchener, E. B. An outline of psychology. New York, 1896. 8°. pp. xiv—352.

—— *Same*. [2d ed.] 1897.

—— The Munich Congress. (Amer. Jour. of Psychology, Oct., 1896, vol. viii., p. 142.)

—— The problem of the sense qualities. (Nature, 28 Jan., 1897, vol. lv., p. 294.)

—— Scientific psychology. (Medical Record, 20 March, 1897, vol. li., p. 397.)

——, *assistant editor*. The American Journal of psychology. July, 1896—April 1897.

——, *associate editor*. Mind; a quarterly review of psychology and philosophy. July, 1896—April, 1897.

——, *editor*. Cornell University psychological bulletins:

xiii. Attention and distraction, by A. J. Hamlin. (Amer. Jour. of Psychology, Oct., 1896, vol. viii., p. 3.)

xiv. An attempt at a psychology of instinct, by A. J. Hamlin. (Mind, Jan. 1897, N. S. vol. vi., p. 59.)

xv. Some forms of stimulus distraction, by F. E. Moyer. (Amer. Jour. of Psychology, April, 1897, vol. viii., p. 405.)

xvi. Localisation of cutaneous impressions without pressure upon the skin, by C. S. Parrish. (*Same*, Jan. 1897, vol. viii., p. 215.)

xvii. The reading of words, by W. B. Pillsbury. (*Same*, April, 1897, vol. viii., p. 315.)

xviii. An attempt to train the visual memory, by E. B. Talbot. (*Same*, p. 414.)

——, *translator.* Introduction to philosophy, by O. Külpe. *See under* Pillsbury, W. B., *translator.*

—— Lectures on human and animal psychology, by W. Wundt. *See under* Creighton, J. E., *translator.*

Trevor, J. E. The molecular theory. Ithaca, N. Y., 1896. 8°. p. 34.

—— Inner thermodynamic equilibria. (Jour. of Physical Chemistry, Jan., 1897, vol. i., p. 205.)

—— Osmotic pressure and variance. (*Same*, March, 1897, vol. i., p. 349.)

—— The variance of osmotic systems. (*Same*, June, 1897, vol. i., p. 537.)

—— *and* F. L. Kortright. Laboratory note book. Ithaca, N. Y., 1896. 8°.

——, *editor.* The Journal of Physical Chemistry. Oct., 1896–May, 1897.

There have also appeared thirty-one signed reviews of books and a large number of reviews of articles in scientific journals in the Jour. of Physical Chemistry, Oct., 1896–June, 1897.

Tyler, C. M. Bases of religious belief, historic and ideal; an outline of religious study. New York, 1897, sm. 8°. pp. 10 + 273.

—— [Review of] Contemporary theology and theism. (Philosophical Review, May, 1897, vol. vi., p. 324.)

Tyler, M. C. The literary history of the American revolution. vol. i. New York, 1897. 8°.

—— The Declaration of Independence in the light of modern criticism. (North Amer. Review, July, 1896, vol. clx., p. 1.)

—— The educational value of the study of history; an introduction to Library of universal history. (Library of universal history. 1897. vol. i., p. iii.)

—— President Witherspoon in the American revolution. (Amer. Historical Review, July, 1896, vol. i., p. 671.)

Watson, T. L. A bibliography of the geological, mineralogical and paleontological literature of the State of Virginia. (Bulletins of Amer. Paleontology, Feb., 1897, no. 7.)

—— Evidences of recent elevation of the southern coast of Baffin Land. (Jour. of Geology, Jan., 1897, vol. v., p. 17.)

—— Lakes with more than one outlet. (Amer. Geologist, April, 1897, vol. xix., p. 267.)

—— [Review of] The relation of the fauna of the Ithaca group to the faunas of the Portage and Chemung, by E. M. Kindle. (Amer. Geologist, Feb., 1897, vol. xix., p. 140.)

Wheeler, B. I. The Eastern question. (New York Tribune, 21 Feb., 1897. p. 14.)

—— The Eastern question [2 articles]. (Watchman, 31 Dec., 1896, p. 12, 7 Jan., 1897, p. 10.)

—— The greater Eastern question. (Buffalo [Sunday] Express, 20 Dec., 1896, p. 19.)

—— Greece and the Eastern question. (Atlantic Monthly, June, 1897, vol. lxxix., p. 721.)

—— Greek duals in -*ε*. (Indogermanische Forschungen, 1896, Bd. vi., p. 135.)

—— The Greek theatre [review of Das griechische Theatre von W. Dörpfeld und E. Reisch]. (New York Tribune, 21 Feb., 1897, p. 14.)

—— Die griechischen Studien and der Cornell Universität zu Ithaca (N. Y.). (Humanistische Gymnasium, 1897, Bd. viii., p. 24.)

—— Grimm's law. (Harper's Dictionary of classical literature and antiquities. 1897. p. 750.)

—— Herodotus. (Library of the world's literature, edited by C. D. Warner. 1897.)

—— The modern Greek as a fighting man. (North Amer. Review, May, 1897, vol. clxiv., p. 609.)

—— [Die Organisation des höheren Unterrichts in den] Vereinigten Staaten von Nordamerika. (Handbuch der Erziehungs- und Unterrichtslehre für höhere Schulen herausgegeben von A. Baumeister. 1897. 1er Bd., 2e Abth. p. 584.)

Wheeler, B. I. *Περὶ τῆς μελοποιίας τῶν Χορικῶν τῆς Ἀντιγόνης.* (Introduction to the *Μελοποιία τῶν χορικῶν καὶ κομμάτων τῆς Ἀντιγόνης τοῦ Σοφοκλέους ὑπὸ Ἰωάννου θ. Σακκελλαρίδου.* Athens, 1896.)

—— The question of language standard in Modern Greece. (Amer. Jour., of Philology, 1897. vol. xviii., no. 2.)

—— Report of the year's work as Professor of the American School of Classical Studies in Athens 1895–96. (Annual report of the Managing Committee, 1895–96, vol. xv., p. 45.)

—— The royal family of Greece. (Century, May, 1897, vol. liv., p. 139.)

—— The Smithsonian Institution and a national university. (Science, 4 June, 1897, N. S., vol. v., p. 881.)

—— The successor of Paul at Corinth. (Examiner, 1896.)

—— Verner's law. (Harper's Dictionary of classical literature and antiquities. 1897. p. 1648.)

White, H. S. [Review of] Social forces in German Literature; by K. Francke. (Educational Review, Feb., 1897, vol. xiii., p. 188.)

—— Euphorion; its range and aims. (Jour. of Germanic Philology, 1897, vol. i., p. 100.)

—— The home of Walther von der Vogelweide. (Jour. of Germanic Philology, 1897, vol. i., p. 1.)

——, *associate editor.* Journal of Germanic Philology. vol. i., no. 1, 1897. 1 no. 8°.

To be issued quarterly.

Wilder, B. G. The Anatomical department condemns the stealing of pet cats [letter to the editor]. (Ithaca Jour., 14 Sept., 1896.)

—— Biology in the schools [discussion at the N. Y. State Science Teachers' Assoc.]. (Science, 2 April, 1897, N. S. vol. v., p. 537.)

—— Brains for the young: the desirability and the feasibility of the acquisition of some real and accurate knowledge of the brain by pre-collegiate scholars. (Arena, March, 1897, vol. xvii., p. 575.)

Report of an address before the Home Congress, 13 Oct., 1896.

—— The cerebral fissures of two philosophers. (Proceedings of the Assoc. of Amer. Anatomists, 1895, p. 71.)

—— Curtis at Cornell and in the Easy Chair. (Cornell Magazine, March, 1897, vol. ix., p. 237.)

—— Discussion of Professor Gage's paper on physiology in the schools. (Proceedings of the University Convocation of the State of N. Y., 1896, p. 73.)

Also in Science, 10 July, 1896, N. S. vol. iv., p. 33.

—— The dorsal sack, the aulix, and the diencephalic flexure. (Jour. of Nervous and Mental Disease, Aug., 1896, p. 543.)

Also in Jour. of Comparative Neurology, June, 1896, vol. vi., p. 128.

—— Earth sciences in the secondary schools [discussion at the N. Y. State Science Teachers' Assoc.]. (Science, 26 March, 1897, N. S. vol. v., p. 506.)

—— The ectal relations of the right and left parietal and paroccipital fissures. (Amer. Neurological Transactions, 1896, p. 37.)

Also in Jour. of Nervous and Mental Disease, Aug., 1896, p. 543; Jour. of Comparative Neurology, June, 1896, vol. vi., p. 129, abstract in N. Y. Medical Record, 11 July, 1896, p. 61; Amer. Naturalist, Nov., 1896, vol. xxx, p. 947; Centralblatt für Anthropologie, Ethnologie und Urgeschichte, 1897, vol. ii.

—— A matter of terms [letter to the editor]. (N. Y. Medical Jour., 11 April, 1896, p. 489.)

—— The metric system [letter to the editor]. (Science, 9 April, 1897, N. S. vol. v., p. 587.)

—— The names *epiphysis*, *conarium*, and *corpus pineale*: correction of an error [letter to the editor]. (*Same*, 14 August, 1896, N. S. vol. iv., p. 199.)

—— Neural terms, international and national. (Jour. of Comparative Neurology, Dec., 1896, vol. vi., p. 216.)

Also separately printed. Granville, O., 1896. 8°. pp. 137. 7 *tables.*

—— *Same*, Parts vii.-ix. List of neural terms, with comments and bibliography. 8°. pp. 52.

—— *Neuron*, *neuraxis*, etc. [discussion of paper by F. Baker]. (Proceedings of the Assoc. of Amer. Anatomists, 1895, p. 44.)

—— The paroccipital fissure, should it be recognized, and under that name? (*Same*, p. 69.)

—— Reminiscences of a science teacher [2 papers]. (Cornell Magazine, Jan., Feb., 1897, vol. ix., pp. 139, 192.)

—— Report as chairman of the Committee on Neuronymy of the Amer. Neurological Assoc. (Amer. Neurological Transactions, 1896, p. 197.)

Also in Jour. of Nervous and Mental Disease, Dec., 1896, vol. xxi., p. 793; Science, 17 July, 1896, N. S. vol. iv., p. 70; Jour. of Comparative Neurology, June, 1896, vol. vi., p. 131; [in part] N. Y. Medical Record, 11 July, 1896, p. 66.

—— Some neural and descriptive terms. (Science, 25 Dec., 1896, N. S. vol. iv., p. 947.)

Also in N. Y. Medical Jour., 2 Jan., 1897; Anatomischer Anzeiger, 10 Feb., 1897, vol. xiii., p. 183.

—— Some recollections of a Brookline boy [2 articles]. (Sagamore, 1897, vol. iii., pp. 128, 233.)

Willcox, W. F. Address given (by invitation) before the National Assoc. of Officials of Bureaus of Labor Statistics. (Proceedings of the 12th annual convention, 1896, p. 76.)

—— A broken reed. (Nation, 15 April, 1897, vol. lxiv., p. 281.)

—— Is there a distinct agricultural question? [discussion.] Handbook of the Amer. Economic Assoc., 1897, p. 63.)

—— Letter to the Kansas Bureau of Labor. (11th annual Report of the Kansas Bureau of Labor and Industry, 1896, p. 199.)

—— Methods of determining the economic productivity of municipal enterprises. (Amer. Jour. of Sociology, Nov. 1896, vol. ii., p. 378.)

Also in Jour. of Social Science, vol. xxxiv., p. 162.

—— Mobility of labor [sociological note]. (Annals of the Amer. Academy of Political and Social Science, Nov., 1896, vol. viii., p. 594.)

—— Round numbers [discussion]. (Publications of the Amer. Statistical Assoc., Dec., 1896, vol. v., p. 132.)

—— Vital statistics of the census [discussion]. (Publications of the Amer. Statistical Asso., March, 1897, vol. v., p. 200.)

—— [Review of] Introduction to sociology; by A. Fairbanks. (Philosophical Review, March, 1897, vol. vi., p. 214.)

—— [Review of] The principles of sociology; by F. H. Giddings. 3d ed. (Philosophical Review, March, 1897, vol. vi., p. 182.)

Also, several letters to the Ithaca Jour., on the mortality of Ithaca, etc.

Williams, S. G. History of modern education. 2d ed. revised and enlarged. Syracuse, 1896. 8°. pp. xxv. +481. *Frontisp.* and *portrs.*

Williams, W. L. Atresia of the right posterior naris in a mare. (Jour. of comparative Medicine and Veterinary archives, May, 1897, vol. xviii., p. 274.)

—— Azoturia and atrophy of the great dorsal muscles as a result of casting. (Amer. Veterinary Review, June, 1897, vol. xxi., p. 157.)

—— The spaying of mares. (Montana Agricultural Experiment Station. Bulletin, July, 1897, No. 12.)

—— The spaying of mares [another article]. (Jour. of Comparative Medicine and Veterinary Archives, June, 1897, vol. xviii., p. 355.)

—— Physiological variations. (Proceedings of the U. S. Veterinary Medical Assoc., 1896, p. 192.)

——, *editor*. Proceedings of the U. S. Veterinary Medical Assoc., 1896. Philadelphia, 1896. 8°. pp. 240.

Woodruff, E. H. A selection of cases on domestic relations and the law of persons. New York, 1897. 8°. pp. xviii. + (1) + 540.

Wright, E. D. Easter among the Athenians. (Northern Christian Advocate, 12 May, 1897, vol. lvii., p. 291.)

—— The festival of Pentecost in Leipsic. (Church Helper, Aug., 1896, vol. vii., p. 45.)

—— Greek students as patriot soldiers. (Ithaca Daily News, 24 March, 1897.)

—— What is Epiphany? (Church Helper, Jan., 1897, vol. viii., p. 22.)

ANNUAL REPORT

OF

THE PRESIDENT

OF

CORNELL UNIVERSITY

1897-98

CORNELL UNIVERSITY

SIXTH
ANNUAL REPORT
OF
PRESIDENT SCHURMAN

1897-98

WITH APPENDICES CONTAINING REPORTS OF THE DEANS
OF FACULTIES, DIRECTORS OF COLLEGES, THE
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PRESIDENT'S REPORT

FOR 1897-98

To the Board of Trustees:

The President of the University has the honor to submit to the Board of Trustees the following Report for the year 1897–98. The Report covers the period from September 20th, 1897, to September 19th, 1898.

THE YEAR IN GENERAL

It is within safe bounds to say that the year has been the most prosperous and healthful and in very many ways the most memorable in the history of the University. Not only has the attendance been larger than ever before, but, owing to the great advance made in recent years in the standards of admission to nearly all courses, a striking improvement has been wrought, and is now markedly visible, in the scholarship of this augmented body of students. The Staff of Instruction, with a numerical strength and efficiency exceeding that of any preceding year, has surpassed its own record in loyalty and devotion to the University and in fraternal and harmonious co-operation with the President and the Trustees, each in their own appointed sphere of service, in the promotion of the high objects to which the University is consecrated and for the sake of which the offices of administration and instruction alike exist. The Board of Trustees, though still mourning the loss of their late devoted Chairman, were never more conscious of the magnitude of their trust or more intent on doing their whole duty in faithfully and impersonally administering it. And while the moral pulse of Trustees and Faculties is in such healthy condition, and while the intellectual life of the University runs so high, the year has witnessed a hitherto unparalleled expansion of its material resources. Apart from the completion of the great hydraulic laboratory and dam at Triphammer Falls, the enlargement of Sage Chapel, now practically finished, and the addition to Morse Hall, which is already begun,—all of which have been charges on the existing resources of the University treasury,—the records of the year are illustrated by three splendid benefactions. The mansion of the late Chairman of the Board was conveyed by his sons—Dean Sage and William H. Sage—to the University as a memorial to their father, to be used as an Infirmary; and they not only fitted it up and equipped it for that purpose, but for its perpetual maintenance they presented with it an endowment of $100,000. The State of New York, following the precedent of the legislation establishing at Cornell the State Veterinary College, established this year the New York State College of Forestry, which, like the Veterinary College, will be maintained by the State and administered by Cornell University. The laboratory of this College will be a demonstration area of 30,000 acres of forest in the Adirondacks, which the State purchases. But the most splendid gift of the year is due to the generosity of a new benefactor whose munificence has enabled the Board of Trustees, without expending one cent of their income, to establish a great department which had long been needed to round out the educational work of the University—a Department of Medicine; and it is the ambition of this generous benefactor to make the Cornell University Medical College, which has just been organized, second to none in the world. It is at once a high honor and a signal mark of public confidence that Cornell University should have been selected, both by the State and by private individuals, as the object of such splendid benefactions and the organ of such noble purposes. It is a new illustration of the discovery long ago made by shrewd business men like Cornell, Sage, McGraw, and Sibley, that in this University philanthropists may find an unexcelled field for the investment of funds in perpetual trust for the elevation of the human race. And the financial history of the University—the splendid record of the administration of its funds—is happily one to inspire confidence in the minds of prospective benefactors.

THIRTY YEARS' GROWTH

This year marks the close of the first generation of Cornell University. The period of thirty years embraced by its history falls into two divisions, during the first of which (1868 to 1881) the University was engaged in a severe struggle for existence, which finally issued in triumphant survival in the year 1882–83. During the second period it has made a record of results and achievements rarely paralleled in the history of universities. The following table shows the condition of the University in 1881 and 1898 respectively:

		1881		1898
Buildings and grounds		$689,465 00		$1,796,372 86
Equipment of departments		253,509 00		1,135,308 12
Invested funds		885,307 84		6,446,818 21
Total property		2,206,974 38		9,378,499 19
Receipts from tuition		14,750 00		121,205 83
Total income		99,166 80		583,050 73
Total expenses		128,751 85		570,586 36
Salaries		93,182 05		286,185 72
Staff of instruction		49		196
Students		399		1,835
Degrees granted		85		424
Library	Volumes 41,222 Pamphlets 11,965	53,187	Volumes 211,278 Pamphlets 35,000	246,278

TRUSTEES

The minute adopted by the Board on the death of the Chairman, Hon. Henry W. Sage, was given in the Report of last year. An admirable portrait of Mr. Sage painted by Mr. J. Colin Forbes on the commission of the Board has since been secured for the library. At the east end of Sage Chapel, which has just been enlarged, there has been constructed for the reception of the remains of Mr. and Mrs. Sage, an apse, which, when artistically decorated—and the Trustees have made a generous appropriation for that purpose—will be the University's special memorial to its late friend and benefactor. Formal exercises in honor of Mr. Sage's memory were held by the University in the great hall of the Armory on February twenty-second, in which the participants, besides the President, were the Rev. Professor Charles Mellen Tyler, Judge Francis M. Finch, Miss M. Carey Thomas, Professor Goldwin Smith, Rev. Dr. Lyman Abbott, and Rev. Stephen H. Synnott, the principal address being given by Judge Finch. These memorial utterances have been printed, and copies of the volume presented to the principal libraries of the world as well as to the friends of the University and of Mr. Sage.

Ex-Governor Roswell P. Flower was, on October 30th, 1897, elected Chairman of the Board of Trustees, in succession to Mr. Sage. His colleagues consider it a piece of remarkable good fortune for the University that a man of Mr. Flower's high reputation in the State and throughout the nation was available for this position. The Trusteeship rendered vacant by Mr. Sage's death has, by resolution of the Board, been left unfilled.

Vacancies in the Board were filled as follows:

ALFRED C. BARNES, elected by the Board, succeeded Alfred C. Barnes, term expired, June 15th, 1898.

FRANKLIN C. CORNELL, elected by the Board, succeeded Franklin C. Cornell, term expired, June 15th, 1898.

CHARLES S. FRANCIS, elected by the Alumni, succeeded Charles S. Francis, term expired, June 15th, 1898.

JARED T. NEWMAN, elected by the Alumni, succeeded Jared T. Newman, term expired, June 15th, 1898.

WILLIAM H. SAGE, elected by the Board, succeeded William H. Sage, term expired, June 15th, 1898.

ROGER B. WILLIAMS, elected by the Board, succeeded George Bliss, deceased, June 15th, 1898.

When the Board of Trustees was enlarged, it was expected that members would be drawn not only from this State but from all sections of the Union. At the present time, however, there is not a man on the Board whose home is not in New York. The graduates of the University, on the other hand, are scattered throughout all the states, and they feel that the national interests and the national reputation of their *Alma Mater* alike demand recognition in the constitution of the Board. On a recent visit to the alumni associations of the West the President of the University heard this view quite generally expressed. The remedy is, in large part at least, in the hands of the graduates themselves; for of the six Trustees annually chosen to serve five years, two are elected directly by the alumni. It may be added that though the other four are elected by the Board their choice often falls on a graduate or old student of the University.

The Board of Trustees meets once a term, that is, three times a year. Most of the routine business devolves of necessity upon the Executive Committee, consisting of the Ithaca Trustees, which meets once a week. Mr. William H. Sage was, on November 2nd, chosen Chairman of the Executive Committee, to succeed his father; but, having decided to leave Ithaca, he resigned on February 1st, when he was succeeded by the Hon. S. D. Halliday. Besides the Executive Committee the Board is represented at Ithaca by standing Committees on Buildings, Grounds, Finance, Land, and Appropriations, and by an Auditing Committee. The death of Hon. Henry W. Sage, the removal from Ithaca of Mr. William H. Sage, and the desire of Mr. George R. Williams to be relieved from some committees and of Mr. Treman to be dropped from the Committee on Grounds, left a number of vacancies in the standing committees, for the filling of which the Board of Trustees made arrangements at the June meeting. Mr. George R. Williams remains Chairman of the Finance Committee, Mr. Lord of the Auditing Committee, and the President of the University of the Committee on Appropriations; but the other three committees receive new chairmen as follows:—Mr. R. H. Treman for Buildings, Mr. F. C. Cornell for Grounds, and Hon. S. D. Halliday for Lands. It is no disparagement of the other standing committees to say that the work of the Finance Committee is the most important, responsible, and arduous of all; and that the painstaking and conscientious manner in which the chairman of that committee, Mr. George R. Williams, discharges with so much efficiency the duties of his office, and the large amount of time he so generously bestows upon the financial management of the University, merit the recognition and gratitude of every friend of Cornell University. In his work he has been greatly assisted by the Treasurer of the University, Mr. Emmons L. Williams, who on completing in 1897 his twenty-fifth year of service in connection with the University received substantial marks of the appreciation in which he is held by the Board.

THE FACULTIES

When one recalls the strife between faculties, presidents, and trustees which even within the last year has wrought so much injury to, and brought so much discredit upon, the colleges and universities of the land—upon venerable and conservative institutions of the East equally with the newer and more plastic institutions of the West—it would not seem improper to rank prominent among the blessings enjoyed by Cornell University the harmony and mutual good feeling and esteem which are regnant among the several authorities—administrative and instructional—of the institution. In spite of the long-continued absence of a thorough organization for the University with differentiation of functions for every member (a defect now happily overcome), in spite of the great variety of departments embraced in the scheme of the University with a corresponding diversity of ends and interests, in spite of the incoming of large numbers of new officers both of administration and instruction consequent upon the enlargement of the Board of Trustees and the increase in the number of teachers to keep pace with the augmentation of the student body, in spite of the far-reaching and fundamental character of much recent legislation,—in spite of all these countervailing influences, which have been operative in recent years, the *esprit de corps* of the University has steadily grown with ever-deepening and quickening energy; the members of the community have been palpably drawn to one another by the interest of the work in which they are engaged; and the whole tone and atmosphere of the fraternity has been vitalized by the sunshine of kindly elements—mutual respect, sympathy, and confidence, reciprocal appreciation and forbearance, and a common spirit of loyalty, devotion, and genuine brotherhood. No force in a University is more potent than this invisible moral spirit which binds its members together into harmonious unity. And for its growth and development at Cornell the President desires to express his gratitude to the Trustees and to the Deans and members of the Faculties who have so nobly wrought for its creation and diffusion. And in this connection the President would like to make his own the closing words of the report (June 15, 1898) of Mr. Jared T. Newman as alumni Trustee: "The principal object I have had in view is to still further advance the kindlier feeling and general *esprit de corps* so manifest during the past year, which I believe is increasing with the years."

Mr. Newman, who devotes his report to a discussion of the reciprocal rights and duties of Trustees and Professors, points out how the spirit of unity and loyalty withers under the influence of arbitrary action by the Board of Trustees or inconsiderate and unjust criticism by professors. But even when the Board is not guilty of caprice or the professor of levity, in the regular administration of affairs matters come up which, as Mr. Newman puts it, the "man of business" must dispose of in a way "diametrically opposed to the traditions and instincts of the man of books." If at such a time a professor is not endowed with some special grace, he must needs have considerable confidence in the wisdom and fairness of the President and Board and much loyalty to the University to keep himself from complaining or criticism; and yet if he fails in this self-restraint, his lapse will loosen the bonds and weaken the *esprit de corps* by which the community is held together. The cases of greatest hardship are those in which deserving professors, whose merits are fully recognized, desire appropriations for their departments which it is impossible for the treasury to furnish, or those in which assistant professors or instructors, who have demonstrated their title to promotion by long, faithful, and highly efficient service, must be told that no advancement is possible here until vacancies in the higher grades occur or new endowments make it possible to establish new positions.

It is greatly to be desired, both on behalf of the able junior members of the staff and for the good of the institution itself, that men of wealth, who desire to use their means for philanthropic purposes, should look into the question of professorial endowments at Cornell. There is scarcely a department in which, owing both to the advance of knowledge and to the increase in the number of students who come here in quest of it, funds are not needed for the multiplication of chairs or for the elevation to full professorships of some of those lower offices which, under other conditions and in earlier days, served well enough the purposes for which they were established. What better use can be made of money than to support able, highly trained, and devoted men while they seek and teach the truth? Meantime the President desires to put upon record his appreciation of the patience and forbearance shown by so many of these young men under circumstances often embarrassing to their work and generally disheartening to their prospects.

The work of the Faculties has been discharged with unusual ease and smoothness. With the exception of a concurrent advance in the entrance requirements provided for by the Faculties of Architecture, Civil Engineering, and Mechanical Engineering, no question of deep and general interest came up in any Faculty in the course of the year.

In pursuance of a long cherished intention to retire at the age of seventy, Professor S. G. Williams tendered his resignation as professor of the institutes and history of education at the October meeting of the Board. Professor Williams has been a member of the Faculty for nineteen years. A pioneer in the field of pedagogy, he was a painstaking and conscientious teacher, and a loyal and devoted officer of the University. Into the retirement which he has well earned he carries the esteem of his colleagues and their best wishes for his health and happiness. In accepting Professor Williams's resignation the Board elected him professor *emeritus*.

Professor James Seth has received and accepted the appointment of professor of moral philosophy in the University of Edinburgh. During his incumbency of the Sage chair of moral philosophy at Cornell, Professor Seth has established a high reputation as a teacher, a thinker, and a man; and his colleagues, who esteemed him highly, and his students, who cherished for him a feeling of admiring affection, will long continue to regret his withdrawal from the University. Professor Seth returns to his native land, to serve his *Alma Mater*; and, if the Sage School of Philosophy is to lose him, it will be some consolation to recall that he fills the chair once occupied by Dugald Stewart and rendered historic by him and by the distinguished professors who have followed him. His colleagues at Cornell University believe that Professor Seth will be a worthy successor of those great Scottish philosophers whose chair he is now to fill.

Mr. F. D. Smith resigned his instructorship in chemistry to accept the professorship of chemistry and physics in the University of Montana. Mr. C. P. Vergauven resigned his instructorship in the Romance langages to accept an advantageous position in the newly established High School in New York City, from which, however, he was soon removed by death. Mr. C. W. Comstock, Mr. J. F. Hayford, and Mr. E. B. Lovell resigned instructorships in the College of Civil Engineering, to become respectively professor of civil and mining engineering in the Colorado State School of Mines, assistant on the United States Coast Survey, and adjunct professor of civil engineering in Columbia University. Mr. I. J. Macomber, Mr. A. T. Bruegel, and Mr. C. E. Houghton, of Sibley College, resigned instructorships in electrical engineering, machine design, and experimental engineering to become respectively professor of electrical engineering in the Armour Institute, Chicago, professor of designing and drawing in the Pratt Institute, Brooklyn, and professor of electrical engineering in the Arkansas Industrial University, Fayetteville, Arkansas. Mr. H. P. Jones, formerly instructor in the Germanic languages, has become associate professor of German at Hobart College, Geneva, New York. Mr. J. R. Lewis, formerly assistant in elocution has become instructor in public speaking and debate at the University of Pennsylvania. Mr. J. F. Snell resigned his assistantship in chemistry to accept a position involving both teaching and research in the chemical laboratory of Wesleyan University, Middletown, Connecticut. Mr. G. F. Danforth, who has been for some years assistant in the reference department of the University Library, has been appointed librarian of the University of Indiana. Among other officers of the University who resigned their positions were Mr. E. T. Adams, formerly instructor in machine design, and Mr. M. W. Roe, formerly assistant in mechanical engineering, who obtained professional employment in large engineering establishments, and Mr. F. S. Crum, formerly assistant to the Registrar, who became statistician to a prominent insurance company.

The eight existing Faculties have been increased during the year by the addition of a Faculty of Medicine and a Faculty of Forestry. The personnel of these Faculties is given in the following paragraphs, along with the other appointees of the year:

CHARLES DE GARMO was appointed professor of the science and art of education. Dr. De Garmo was born in Wisconsin in 1849. He received his earlier education in Illinois public schools, and in the Illinois State Normal University, from which he graduated in 1873. He spent 1883–86 studying in Germany, 1883–84 in the University of Jena and 1884–86 in the University of Halle, giving special attention to economics, history, art, and philosophy. He received the Ph.D. degree from Halle in 1886. Dr. De Garmo has had a broad and valuable experience as a teacher. Beginning with a year in a country school before entering the Normal University, he followed up his graduation there with three years as public school principal, and seven years as principal of the grammar school department of the Normal University. The four years following his return from Germany he spent as professor of modern languages in the Normal University. During 1890–91 he was professor of psychology in the University of Illinois. Since 1891 he has been president of Swarthmore College. He has published A Drill Book in Dictionary Work (in collaboration); The Essentials of Method; a translation of Lindner's Empirical Psychology; Tales of Troy; Herbart and the Herbartians; etc.; besides editing numerous books and periodicals, and publishing frequent articles in educational journals. Since 1891 Dr. De Garmo has been a member of the National Council of Education, of which he was president for 1897; he has read papers almost yearly before the National Educational Association since 1887; he is a member of the American Philosophical Association, and he has been president of the National Herbart Society since its foundation in 1892.

HENRY STEPHEN REDFIELD was appointed professor of law. Mr. Redfield graduated from the Elmira Academy, and thereafter followed business pursuits for some years prior to entering Amherst College, from which he graduated B.A. in 1877, standing fourth in a class of seventy-five members. His *Alma Mater* subsequently conferred A.M. upon him. In 1879 Mr. Redfield was admitted to the bar of this State and entered into partnership with Judge Diven of Elmira, with whom he had studied law. This partnership has continued to the present, its business being largely corporation practice, including some large railroad interests.

GARDNER STEWART WILLIAMS was appointed professor of experimental hydraulics in charge of the hydraulic laboratory. Mr. Williams was born in Saginaw, Michigan, in 1866. He graduated from the Saginaw High School in 1884 and from the University of Michigan in 1889, taking the degree of B.S.C.E. In 1888 he was assistant engineer on water works construction at Bismarck, Dakota ; in 1888 resident engineer on similar construction at Greenville, Michigan, and in 1889 at Owosso, Michigan. From 1890 to 1893 Mr. Williams was engaged with the Russel Wheel and Foundry Co., of Detroit, in the design and erection of structural iron and in light house and blast furnace work. In January, 1893, he was appointed assistant superintendent of construction of the U. S. lighthouse board, which position, however, he immediately resigned to accept that of civil engineer to the board of water commissioners of Detroit, which he has held up to the present. For two years he has been secretary of the Detroit Engineering Society, and he is an associate member of the American Society of Civil Engineers.

HERBERT WADE HIBBARD was appointed assistant professor of mechanical engineering of railways and Principal of the Graduate School of Railway Mechanical Engineering. Mr. Hibbard graduated A.B. from Brown University in 1886. He spent the next three years personally constructing the various parts of locomotives in the shops of the Rhode Island Locomotive Works. The next two years were spent at Cornell, where

Mr. Hibbard graduated M.E. in 1891. He then spent three years in the office of the mechanical engineer of the Pennsylvania Railroad, at Altoona, designing, testing, and making investigations. One summer during this period, however, he was sent to Europe to investigate locomotive shops and railway engineering in England and on the continent, when he also visited the leading technical schools. Mr. Hibbard then became chief draftsman of the Lehigh Valley Railway, doing locomotive and car designing and general railway mechanical engineering work advisory to the superintendent of motive power. In 1895 Mr. Hibbard was called to an assistant professorship of mechanical engineering, in charge of machine design and railway mechanical engineering, in the University of Minnesota, in which he has continued up to the present, rapidly building up a strong course in railway mechanical engineering. He is the author of several important monographs on technical subjects.

OLAF M. BRAUNER was appointed assistant professor of architecture. Mr. Brauner, after a year in the art department of the New England Conservatory of Music, entered in 1888 the Massachusetts Normal Art School, where in his second year he was made assistant instructor. Graduating in 1892 Mr. Brauner was offered a scholarship in the School of Drawing and Painting in the Boston Museum of Painting. He studied under Benson and Tarbell in drawing and painting from life until 1895, acting as assistant instructor during that time. He was then appointed instructor at Cornell University, in which position he continued until his present appointment.

EVERETT WARD OLMSTED was appointed assistant professor of the Romance languages. Mr. Olmsted completed the freshman and sophomore years of his college course at Knox College. He then transferred to Cornell University, from which he graduated in 1891. The summers of 1891 and 1892 were spent by him in France, and that of 1893 in France and Italy. Meanwhile Mr. Olmsted served two years as teacher of French in the Cascadilla School, at Ithaca. He then taught two years as instructor in French in this University, resigning in 1895, when he went abroad for a year's study in France and Italy. During the year he was a registered student of the Sorbonne besides following courses at the École des Chartes and at the Collége de France. He was then, in the fall of 1896, appointed to an instructorship in Romance languages in this University which he has held up to the present. In 1897 he received from Cornell University the Ph.D. degree, the subject of his thesis being The Development of the Sonnet-form in French Literature.

Henry Neely Ogden, hitherto instructor, was appointed assistant professor of civil engineering, Mr. Ogden entered the civil engineering department of Cornell University in the Fall of 1885 and graduated in 1889 with the degree of C.E. The academic year 1889–90 he served as instructor in this University. The following summer he spent in Europe, visiting sewage farms, and was present as a member of the International Congress of Hygiene at Brighton, England. The years 1892–94 he spent in the office and field work of the Chicago Drainage Canal, in a private office in Norfolk, Virginia, and as city engineer of Deering, Maine. In the fall of 1894, he returned to Cornell where he has since remained in charge, under Professor Fuertes, of the special work in sanitary engineering. In the spring of 1895, Mr. Ogden was appointed chief engineer to the Ithaca Sewer Commission with the entire charge of construction. Mr. Ogden is an associate member of the American Society of Civil Engineers and a member of the honorary society of Sigma Xi. He has made contributions to engineering periodicals at different times and has written for the transactions of the American Society of Civil Engineers articles on Sewer Flushing and on Sewer Assessments.

Dexter Simpson Kimball was appointed assistant professor of machine design. Mr. Kimball was born in St. John, New Brunswick, and received his early education in that province. In 1881 he removed with his parents to the State of Washington, and there served his apprenticeship in machine shops at Port Gamble. The years 1887–93 he spent in the employ of the Union Iron Works of San Francisco. In the latter year he entered Stanford University, from which he graduated A.B. in 1896. After graduation he worked in the drafting room of the Union Iron Works till last spring, when he went to Anaconda, Montana, to do designing for the supervising engineer of the Anaconda Copper Mining Co., and was there employed up to his present appointment.

WILLIAM MECKLENBURG POLK was appointed Director of the Medical College and professor of gynæcology and obstetrics. Dr. Polk was born at Ashwood, Tennessee, and is the son of Leonidas Polk, Bishop of Louisiana, who held the rank of lieutenant-general in the Confederate Army during the Civil War. Dr. Polk himself at the outbreak of the war left the Virginia Military Institute, in which he was studying under "Stonewall" Jackson, and served throughout the war in the Confederate Army, in which, at the close of hostilities, though barely twenty-one, he held the rank of captain, having fought in most of the famous battles of the West, such as Shiloh, Corinth, Perryville, Stone River, Chickamauga, those of the Atlanta campaign, etc. Upon the restoration of peace, he become a student in the medical department of the University of Louisiana. In the fall of 1868 he removed to New York where he continued his professional studies in the College of Physicians and Surgeons, and, after his graduation from that institution, in the Bellevue Hospital, where he was first interne, and afterwards curator of the department of pathology. He continued to hold positions in connection with Bellevue Hospital and the Bellevue Hospital Medical College up to 1879, from which date until his present appointment he was professor of obstetrics and gynæcology in the medical department of the University of the City of New York. Dr. Polk is a leading member of the New York Obstetrical Society, of which he was president from 1884 to 1886; of the American Gynæcological Society of which he was president in 1895–96; of the New York Academy of Medicine, of which he was vice-president in 1896–97. He is honorary member of the American Association of Physicians, and member of the British Gynæcological Society, and of the International Society of Obstetricians and Gynæcologists. He is the author of numerous contributions to medical literature, the more important being The Surgical Disorders of the Uterus (Vol. IV Dennis's Encyclopedia of Surgery); Inflammation Disorders of the Uterus and Appendages (Keating & Coe's Clinical Gynæcology); Clinical Disorders of the Uterus; and several essays bearing upon conservatism in the surgical treatment of inflammatory disorders of the uterus and appendages published in the transactions of the Association of American Physicians, the transactions of the Congress of American Physicians and Surgeons, the transactions of the American Gynæcological Society, of the New York Obstetrical Society, and of the New York Academy of Medicine. His Life of Leonidas Polk, Bishop and General, is a standard work upon the Civil War.

LEWIS A. STIMSON was appointed professor of surgery. Dr. Stimson graduated A.B. at Yale, 1863, and studied medicine in Zurich, Paris, and New York. He was appointed professor of surgical pathology in the University of the City of New York in 1878, of physiology in 1882, of anatomy in 1885, and of surgery in 1888, holding the last named chair up to his present appointment. He became attending surgeon of the Presbyterian Hospital in 1876, of Bellevue Hospital in 1879, and of the New York Hospital and Hudson Street Hospital in 1888. He was chosen corresponding member of the *Société de Chirurgie* (Paris) about 1886 and was president of the New York Surgical Society, 1887–89, and vice-president of the New York Academy of Medicine, 1893–96. Dr. Stimson has written a text-book of Operative Surgery (1878), and treatises on Fractures (1882), and Dislocations (1888), and is joint author of the American Text-Book of Surgery (1892) and of a System of Surgery (1896).

RUDOLPH AUGUST WITTHAUS was appointed professor of chemistry, physics, and toxicology. Dr. Witthaus graduated A.B. from Columbia College in the class of 1867. He thereafter studied law in the Columbia Law School and medicine in the Bellevue Hospital Medical College and in the New York University, receiving M.D. from the latter in '75; after which he was a student of chemistry in the Sorbonne, Paris, under Schützenberger and Grimaux, and in the Collége de France under Berthelot. After his return to this country he was professor of physiological chemistry in New York University, 1875–78, and he has been professor of chemistry and toxicology in the University of Vermont since 1878. He also held a professorship of chemistry and toxicology in the University of

Buffalo from 1882 to 1885, and from 1883 to 1886 he was city chemist of Buffalo. From 1885 to 1897 he filled the professorship of chemistry, physics, and hygiene in the New York University. He is the author of Essentials of Chemistry, which has reached its thirteenth edition; of General Medical Chemistry; Manual of Chemistry, now in its fourth edition; Laboratory Guide, also in its fourth edition; articles on toxicology of opium, hydrocyanic acid, oxalic acid and strychnine, and putrid poisons, in the Reference Handbook of the Medical Sciences. He has served as toxicological expert in numerous trials for murder by poison in this and other states.

WILLIAM GILMAN THOMPSON was appointed professor of medicine. Dr. Thompson graduated from Yale, and then studied medicine in the University of Berlin, Germany, King's College, London, and the College of Physicians and Surgeons, New York, taking his M.D. from the last named in 1881, and subsequently serving as interne in the New York Hospital. From 1887 to 1898 Dr. Thompson filled professorships in the New York University Medical College, and was also for some years professor of physiology in the Woman's Medical College. He served for some time as visiting physician to the Bloomingdale Asylum, visiting physician to the New York Cancer Hospital, physician to the Roosevelt Hospital Dispensary, and visiting physician to the New York Hospital. He has also been a member of the visiting staff of the Presbyterian Hospital since 1887 and of the Bellevue Hospital since 1895. Professor Thompson is editor of the American System of Practical Medicine, and author of Practical Dietetics, and of numerous articles on medical topics.

GEORGE WOOLSEY was appointed Professor of Anatomy and Clinical Surgery. Dr. Woolsey prepared for college in the Hopkins Grammar School. After graduating at Yale he spent one year of graduate study there in Biology. Then he entered the College of Physicians and Surgeons, New York, whence he graduated with highest honors in 1885. The next eighteen months he spent on the house staff of Roosevelt Hospital, and then studied abroad two years, in Vienna and Paris. On returning to New York, Dr. Woolsey was connected with the Roosevelt and Presbyterian Hospitals until 1890, when he was appointed visiting surgeon to Bellevue Hospital and professor of anatomy and clinical surgery in the University of the City of New York, holding both positions until his resignation of the latter to accept his present appointment.

HENRY P. LOOMIS was appointed professor of materia medica, therapeutics, and clinical medicine. Dr. Loomis graduated from Princeton in 1880 and the Medical College of the New York University in 1883. Thereafter he served on the Bellevue Hospital staff and studied in Vienna, Berlin, and Heidelberg. In 1887 he became visiting physician to Bellevue Hospital and also consulting pathologist to the Board of Health of New York City. In 1888 he became lecturer on pathology in the New York University Medical College, in 1890 professor of pathology, in 1897 professor of materia medica, therapeutics, and clinical medicine in the same institution. He also became in 1896 visiting physician to the New York Hospital. He is the author of numerous monographs on professional subjects.

JAMES CLIFTON EDGAR was appointed professor of obstetrics. Dr. Edgar obtained his preparatory education at St. Paul's School, Concord New Hampshire, and his collegiate education at Lafayette College, where he took both Ph.B. and A.B. He then studied medicine in the University of the City of New York, taking his M.D. in 1885, and thereafter serving two years as interne in Bellevue Hospital and six months as interne in the Royal Frauenklinik at Munich, Bavaria. In 1887 Dr. Edgar was appointed assistant curator to Bellevue Hospital and instructor in pathology in his *Alma Mater*, becoming, in the latter, successively lecturer, adjunct professor, associate professor, and professor of obstetrics. He has meanwhile served as attending physician to Bellevue Hospital Dispensary and assistant gynæcologist to the Cancer Hospital, and is now attending physician to the Society of the Lying-in Hospital, to the New York Maternity Hospital, and to the Emergency Hospital. Dr. Edgar edited Winckel's Text-Book of Obstetrics, and is the author of The Manikin in the Teaching of Practical Obstetrics, etc., etc.

AUSTIN FLINT was appointed professor of physiology. Dr. Flint entered but did not graduate from Harvard. Prior to taking his M.D. from the Jefferson Medical College, Philadelphia, he studied medicine also in a physician's office in Buffalo, New York, and in the University of Louisville and taught physiology in the Woodstock Medical College. From 1857 to 1860 he was editor of the Buffalo Medical Journal, and during part of that time professor of physiology in the Buffalo University Medical College, and visiting surgeon to the Buffalo General Hospital. After serving one year each as professor of physiology in the New York Medical College and the New Orleans School of Medicine Dr. Flint went to Europe in 1861 where he studied physiology with Professor Claude Bernard and Histology with Professor Charles Robin. The years 1862-1866 were spent as acting assistant surgeon in the U. S. Army. Dr. Flint was one of the founders of the Bellevue Hospital Medical College, and professor of physiology therein from 1861 to 1898. He became visiting physician to Bellevue Hospital in 1869 and consulting physician thereto in 1896. He also became consulting physician to the Manhattan State Hospital in 1896, visiting physician to the Insane Pavilion, Bellevue Hospital, 1896, etc. Professor Flint is a member of the American Medical Association, fellow of the New York State Medical Association, etc., and was in 1895 president of the New York State Medical Association. He is author of the Physiology of Man (5 vols.) ; Manual of Chemical Examination of the Urine in Disease ; Physiological Effects of Severe and Prolonged Muscular Exercise ; Text-Book of Human Physiology ; Source of Muscular Power ; and numerous pamphlets and magazine articles.

FREDERIC SHEPARD DENNIS was appointed professor of clinical surgery. Dr. Dennis obtained his general education from Phillips Academy and Yale, and his medical education in an office and in the Bellevue Hospital Medical College, Bellevue Hospital, and the Royal College of Surgeons of England, graduating from these institutions respectively in 1874, 1876, and 1877. He was subsequently elected a member of the Clinical Society of London and of the German Surgical Congress of Berlin. After continuing his studies in the Universities of Heidelberg, Vienna, and Berlin, he received an appointment in the Bellevue Hospital Medical College with which he continued connected until his present appointment. Professor Dennis is visiting surgeon to Bellevue Hospital and St. Vincent's Hospital and consulting surgeon to St. Joseph's Hospital, Montefiore Home, and the Harlem Hospital. He is a member of numerous medical and surgical societies, and has been president of the American Surgical Association. He is author of numerous surgical articles, a contributor to surgical text-books, and editor of Dennis's System of Surgery (in four vols).

Frederick Walker Gwyer was appointed professor of operative and clinical surgery. Dr. Gwyer obtained his education in the New York public schools, in German schools, in which he spent two years, and in the University of New York, from which he took the M.D. degree in 1883. He was then upon competitive examination appointed interne at Bellevue Hospital and served two years. In 1885 he was appointed lecturer on anatomy in his *Alma Mater;* in 1888 lecturer on surgery ; in 1890 professor of operative and clinical surgery ; and in 1896 adjunct professor of surgery. Having served from 1888 to 1891 as assistant visiting surgeon to Bellevue Hospital, he has since 1891 acted as visiting surgeon to that institution. He is also consulting surgeon to Beth Israel Hospital, to Mount Vernon Hospital, and to the Infirmary of the New York Dental School.

Irving Samuel Haynes was appointed professor of practical anatomy. Dr. Haynes graduated from the Plattsburgh High School at the head of his class, Ph.B. from Wesleyan University with special honor in Chemistry, and M.D. from the University of the City of New York with rank of second in the class. This rank entitled him to a surgical position in Bellevue Hospital, which he accepted. In 1888 he was appointed to the medical staff of the University of the City of New York, with which he has been connected up to his present appointment. He has read before medical societies and has published a number of articles on medical subjects.

Bernhard Eduard Fernow was appointed Director of the New York State College of Forestry and professor of forestry. Born in Prussia, Dr. Fernow obtained his education in the State College of Forestry at Münden, Prussia, and studied law in the University of Königsberg. At an unusually early age he was appointed to managerial work in the Prussian Forestry Department, where he remained until 1876, except during the Franco-Prussian War, in which he served as a volunteer. In 1876 he received permission to visit the Centennial Exposition at Philadelphia, and he then decided to remain in America. After conducting a metallurgical business in New York for some years he accepted an opportunity to manage a a forest property in the Lehigh Valley. After spending three years in this work he resumed law studies in New York but soon, in 1886, he was appointed chief of the U. S. Division of Forestry, which position he has filled for twelve years, creating the division and making of it an established success. He holds the degree of LL.D. from the University of Wisconsin.

FILIBERT ROTH was appointed assistant professor of forestry. Mr. Roth entered the University of Michigan in 1885, having previously had some practical experience in lumbering in Wisconsin. In 1887 he became custodian of the museum of that University, and in 1888 he began investigations in timber physics for the U. S. Department of Agriculture. In 1890 he graduated B.S. from the University of Michigan. Since 1893 Mr. Roth has been on the staff of the U. S. Division of Forestry. Of his many publications one on Timber has been translated into French, used as a text-book in several schools, copied *in toto* by a number of technical journals, and embodied in Johnson's engineering text-book on the materials of construction.

The Staff of Instruction in 1897–98* consisted of the following members:

Professors	51
Associate professors	7
Assistant professors	25
Lecturers	2
Instructors	57
Assistants, etc.	54
Total	196

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* The professors of medicine and forestry, whose names are given on the preceding pages, are not included in the following figures, as they do not enter upon their duties until 1898–99.

The foregoing embraces only the regular resident staff. Courses of lectures or single lectures were given during the year by 41 non-resident lecturers. The pulpit of Sage Chapel was occupied by 32 preachers.

STUDENTS

The total number of persons receiving instruction at the University in 1897–98 was 2131. Exclusive of those attending the Summer Schools (203) and those attending the Winter School in Agriculture (93), there were regularly enrolled 1835 students. This is the largest attendance ever registered, exceeding that even of 1893–94, which was the last year of low entrance requirements for the great majority of undergraduates, and of free tuition for all graduates. Considering the enormous advance, extensive and intensive, which has been made in the entrance requirements annually since 1894, these figures are striking and certainly very encouraging evidence of the hold which the University has obtained upon the country.

The attendance was distributed as follows :

GRADUATE DEPARTMENT :

Fellows	22	
Scholars	19	
Graduates, candidates for advanced degrees	152	
Graduates, not candidates for degrees	14	
Total, deducting for names counted twice		166

[*This does not include 84 graduate students enrolled in undergraduate courses.*]

ACADEMIC DEPARTMENT :

Senior class	127	
Junior class	121	
Sophomore class	164	
Freshman class	171	
Medical preparatory students	10	
Special students	31	
Total		624

College of Law:

Third-year class	112	
Second-year class	18	
First-year class	104	
Optional students	3	
Special students	9	
Total		246

College of Agriculture:

Senior class	12	
Junior class	4	
Sophomore class	8	
Freshman class	32	
Special students	28	
Total		84

State College of Veterinary Medicine:

Third-year class	7	
Second-year class	5	
First-year class	4	
Total		16

College of Architecture:

Senior class	6	
Junior class	10	
Sophomore class	18	
Freshman class	18	
Special student	1	
Total		53

College of Civil Engineering:

Senior class	17	
Junior class	26	
Sophomore class	56	
Freshman class	80	
Total		179

SIBLEY COLLEGE OF MECHANICAL ENGINEERING:

Senior class	57	
Junior class	90	
Sophomore class	122	
Freshman class	182	
Special students	16	
Total		467
Whole number of students		1835

SUMMER SCHOOL, 1898;

General and technical courses	180	
Law courses	23	
Total		203
STUDENTS in short course in agriculture (Winter, 1898)		93
Total pursuing studies at University		2131

The number of persons who gained admittance to the University for the first time in 1897–98 was 617. Of these 114 entered from other colleges. This is the largest enrollment there has ever been of that class of students, of whom ten years ago there were only 37. In the Registrar's report (see Appendix XI, pp. LXI–LXXII) will be found an interesting list of colleges from which in the last twelve years such students have come to Cornell. It is gratifying to see the number of them increasing. The number matriculating by examination or by the presentation of Regents' diplomas and school certificates has almost reached the level of 1893–94, at the close of which the almost universal advance in entrance requirements began to go into effect. The drop and recovery are indicated by the following figures: 389, in 1893–94; 297, in 1894–95; 311, in 1895–96; 361, in 1896–97; and 358, in 1897–98. These figures do not include 76 students entering the College of Law, whose mode of entrance does not precisely conform to any of the above descriptions; and there are also to be added 69 students admitted to special studies upon the recommendation of the professors concerned.

Of the undergraduates admitted for the first time to the University in 1897–98 exactly 62 per cent came from New York State, and of the graduates only 17.5 per cent. There is a larger percentage of New Yorkers in the Courses in Law and Architecture than anywhere else; they constitute four fifths of each enrollment. But in the Course in Arts and Science, 71 per cent are New Yorkers, and in the Course in Veterinary Medicine also 71 per cent. Of students in the Course in Civil Engineering 56 per cent and in Mechanical Engineering 48 per cent are New Yorkers.

Exhaustive tables will be found in the Registrar's report, showing both the average and the median age of freshmen for the past three years. The median age, which statisticians regard as a juster and more illuminative abstract of the facts than the average age, is the middle point among the ages of a group, the point where one half the number are below and one half above it. The median age of Cornell freshmen was $19\frac{11}{12}$ years in 1895–96, $19\frac{8}{12}$ years in 1896–97, and $19\frac{7}{12}$ years in 1897–98. Yet in the course in Arts (excluding women) the median age of freshmen rose from $19\frac{1}{12}$ in 1896–97 to $19\frac{2}{12}$ years in 1897–98; and it rose in the Course in Civil Engineering from $19\frac{5}{12}$ to $19\frac{8}{12}$, and in Mechanical Engineering from $19\frac{2}{12}$ to $19\frac{5}{24}$. There was a decrease in other Courses, in Law, Architecture, etc., so that, as already observed, the median age for the entire body of freshmen was lower than it was either in 1895–96 or in 1896–97. This is a point of the utmost importance; for the lower the age at which young men and women are prepared to enter college, the more time will it be possible for them afterwards to bestow both on liberal training and professional education.

The number of degrees conferred in June, 1898, was 424, of which 375 were first degrees and 49 advanced degrees. Among the latter were 23 Ph.D.'s—fifty per cent more than had ever been conferred at any previous Commencement. As standards have been advanced rather than lowered this is a significant indication of the development of the Graduate Department. In connection with the subject of degrees the President thinks it worth while to call attention to the fact that in the last six years he has conferred as many degrees (2,304) as his two predecessors together conferred in the preceding twenty-four years of the existence of the University.

The University continues to be a place of hard work and strenuous endeavor. Although numbers increase, the tone of the institution is still one of studiousness and seriousness. Discipline is maintained by appeals to the manliness, honor, and loyalty of students; and those who are not amenable to these influences are, when discovered, removed from the University. The past year has been characterized, in spite of some individual shortcomings, by a high standard of conduct and aim on the part of the great body of students. The last Report, in dealing with student affairs, chronicled the victory of Cornell debaters over Pennsylvania at Philadelphia and of Cornell oarsmen over those of Harvard and Yale at Poughkeepsie. It is pleasant to record similar victories this year, though the oratorical contest was at Ithaca and the aquatic at New London. The field of oratorical honors has been enlarged by the formation of an intercollegiate league embracing colleges from the Hudson to the Mississippi; and in the first competition the Cornell orator carried off the second honors. Whether this example will be followed in aquatic contests it is difficult to say. But whether or not the Cornell idea—an open field to all and favor to none—now becomes the established practice of the American rowing colleges, the public will at least appreciate the grounds of it, and the University is left in a favorable position for almost any future development.

CORNELL MEN IN THE WAR

During the latter part of the year, owing to the war with Spain, martial interest and enthusiasm exceeded athletic. After having served the country along the lines of peace for the first twenty-nine years of its existence, Cornell University, at last, in its thirtieth year, has been given the opportunity to demonstrate in time of war the wholeness of its patriotism, and to justify the foresight of Senator Morrill and his colleagues of the national legislature who, in providing for the erection of that system of institutions of which Cornell is a part, directed the combination of instruction in the military science and art along with liberal, professional, and technological training.

Before the outbreak of hostilities the students, in mass meeting assembled, passed the following preamble and resolution:

> WHEREAS, Being fearful of active hostilities, as a result of the strained relations now existing between the United States and Spain, be it
>
> *Resolved*, That we, students of Cornell University representing every state and territory in the Union, do hereby tender to his Excellency, the President of the United States, our heartiest sympathy and support in all that he has done or may do.

A few weeks later the University Faculty, responding to a numerously signed petition from the students, unanimously passed the following recommendations, which were afterwards adopted by all the Special Faculties:

> *Resolved*, That the University Faculty advises that the several Faculties recommend for graduation in June all members of the senior class, in good standing, who are, or may become, members of the regular or volunteer military or naval forces of the country, and are actually called into service.
>
> *Resolved*, That the University Faculty recommends to the several Faculties that all other students who enter the active military or naval service of the country be given a leave of absence without prejudice.

Then followed the heat and burden of actual hostilities. How large a share Cornellians played in the war cannot at once be known in its entirety. Certain it is that students and alumni of this University served in the United States Navy,—in the Staff, in the Line, in the Engineer Corps, and in the Naval Militia; that they held commissions as officers of regulars in the United States Army, in which recent alumni had been serving for some years and in which they fought at Santiago; that they fought, and some, alas, fell at Guasimas with the Rough Riders, and before Santiago in the Seventy-First New York Volunteers, where Clifton Beckwith Brown, of Cleveland, Ohio, a member of the class of 1900, was killed by a Spanish bullet upon the hill of San Juan; that they were among the first to land upon the soil of Porto Rico, and raise the American flag over the first city captured; and that at Manila, in the far Philippines, Cornellians shared in Dewey's naval victory, and again Cornellians in the Utah battery helped to bear the brunt of the savage night attack of the Spaniards when land fighting there began, and, in the Astor battery, the brunt of the last land fighting of the war when Manila itself was taken.

Not only did every New York regiment take to the front its quota of Cornellians, but as this record shows they demonstrated once more the broadly national character of the constituency and services of this University by enlisting with the troops of many a state, even as far away as distant Utah. Nor were they more confined in the kind of service rendered, for they went to the front as officers and as privates, as surgeons and as chaplains, as cavalrymen, as artillerymen, as infantrymen, and as engineers. In every scene of the drama of war, by flood and field, in east and west, from first to last, they have done heroic service and when their full roll and record can be made out, it may fitly hang in the place of honor on the walls of the American History Seminary Room, in the University Library, an impressive reminder that Cornell men not only help to write but that they help to make American History.

THE GRADUATE DEPARTMENT

During the last eleven years 862 graduates, coming from 152 different institutions, have been admitted to graduate work in Cornell University. This of course excludes the large number of graduates of other colleges who are annually admitted to undergraduate courses in the Academic Department and the professional colleges. In 1897–98 there were in the Graduate Department 166 graduate students, exclusive of 84 enrolled in the undergraduate department. Of these 152 were candidates for advanced degrees, which is an increase of 15 over the enrollment of 1896–97. There were 89 studying for the Ph.D., 11 for the D.Sc., 19 for the A.M., 11 for the M.S., 4 for the M.C.E., 11 for the M.M.E., and 7 for the LL.M. degree. There is a large increase in the number of graduates taking a major in history and political science, a considerable increase of those in chemistry, and slight gains in philosophy, Latin and Greek. An unprecedentedly large number of graduates, having satisfactorily completed their candidacy, received the Ph.D. degree,—23 persons, which is fifty per cent higher than the number for any preceding year.

Many interesting details in regard to the administration of the Graduate Department will be found in Dean White's report (Appendix II, pp. VI–XVIII). The most important point to emphasize here is his plea for additional fellowships, especially traveling fellowships. An endowment of $10,000 or $15,000 would establish a fellowship. And when one recalls the benefit of such a gift to able but needy young men and women, and the endless succession of beneficiaries it would help to the highest education, it is a matter of surprise that more persons of moderate wealth do not take advantage of such an opportunity to promote learning, to serve the Republic, and to develop humanity.

THE ACADEMIC DEPARTMENT

The number of students in the Academic Department in 1897–98 was 624, or, excluding special students, 593. Of the 593 students regularly enrolled, 164 were new students. Of these new students 116 came from the State of New York and 48 from other states and foreign countries. The median age (see p. 28) of freshmen was, men 19 years, two months, women 20 years.

The staff of the Academic Department has lost Professors Williams and Seth (see p. 12). The former has been succeeded by President De Garmo of Swarthmore College (see p. 14). The Sage Chair of Moral Philosophy left vacant by the resignation of Professor Seth has not yet been filled; but provisional arrangements for carrying the work have been made. The President is to resume the course in systematic ethics, Professor Creighton and Dr. Irons to take the ethical seminary and Professor Hammond and Dr. Albee the course in the history of ethics;—all for two terms only, while Professor Seth himself returns from Edinburgh to take charge of all the courses in ethics in the spring term, and the theses and degree examinations as well.

The chief subject of interest in the Faculty of Arts and Sciences was the working of the new elective system of which an admirable account will be found in Dean Crane's report (Appendix III, pp. XVIII–XXXIV). This system, it will be recalled, was adopted as part of a scheme whose other elements were, first, the raising of all standards of admission to the Academic Department to the level of those set for entrance upon the A.B. course, and, secondly, the consolidation of the Ph.B., B.L., and B.S. degrees with the A.B. degree. The subjects for admission, in addition to the primary lists, consist of three equalized groups: (A) Greek and Latin; (B) Latin and advanced French or advanced German; and (C) advanced French, advanced German, and advanced Mathematics.

Of the 137 freshmen admitted for the first time to the Academic department, 47 entered by Group A, 81 by Group B, and 9 by Group C. That is to say, only 9 entered without Greek or Latin; and of the remaining 128 all offered Latin, 81 of them combining it with a modern language, and 47 combining it with Greek. As to the effect of the elective entrance groups upon classical studies at Cornell, it may be stated that considerably more matriculants (128 as against 106) presented Latin in 1897–98 than in 1896–97 and somewhat fewer—12 fewer—presented Greek.

It is interesting and with the lapse of years will be found very instructive, to note the studies elected by freshmen after entering. The Dean's report shows that there is a large preponderance of electives in languages, being 524 to 351 of all other studies. In the latter figure are included 160 courses elected in science, 80 in history and political science, and 77 in mathematics. The most popular sciences are chemistry and physiology; yet more courses are elected in Latin than in both together.

The requirements of advanced French, advanced German, and advanced mathematics in Group C are harder to meet, under conditions now prevailing in the schools, than the corresponding requirements of Groups A and B. The result is that candidates are forced into these latter groups, notably Group B, and such persons as soon as they matriculate resume the natural bent of their inclinations. This undoubtedly explains the fact that 39 freshmen dropped the classics by which they entered. The faculty, as suggested in the report of last year (pp. 20–21), have established in Group C a requirement in science as an alternative for the advanced mathematics.

This offer of an alternative in science, while not lowering the standard of admission to the Academic Department, will lessen the practical difficulty of meeting the specific demands of the group, and it will at the same time encourage the study of science in the schools. This latter end will also be promoted by the similar action of the Faculties of Civil Engineering, Mechanical Engineering, and Architecture, under which provision is made for the acceptance of scientific subjects as part of the requirement for admission to those courses.

THE COLLEGE OF LAW

The year 1897–98 marked the introduction of the three-year course, which, however, will not be represented by three full classes till 1899–1900. In 1898–99, while there are still only two regular classes, the requirements for admission are also to be advanced to the level of the standard set by the Academic Department. That year cannot fail to witness a considerable decline in the attendance. But in 1897–98, the year now under review, the attendance was above the normal,—indeed the highest ever reached, not excepting 1896–97, when (as stated in the last Report) it "received an extraordinary stimulus from the fact that it was the last year of the two years' course, and the last but one of the low entrance requirements." The total number of students coming under the instruction of the Faculty of Law was 296. Of these 246 were regularly enrolled in the College of Law, 42 were students in the general and technical courses electing a portion of their work in law, and the remainder were graduate students. The attendance of law students proper in the last seven years has been in 1891–92, 122; in 1892–93, 176; in 1893–94, 197; in 1894–95, 191; in 1895–96, 207; in 1896–97, 239; in 1897–98, 246. The Registrar's report shows that, of the 246 students enrolled in 1897–98, 93 were new students. Of these 74 or 79.6 per cent were from New York State and 19 or 20.4 per cent from other states and from foreign countries. It appears also that the median age (see p. 28) of entering students, excluding one woman student, was 19 years and 9 months (which was 7 months lower than last year). In the course of the year 25 students were dropped for imperfect scholarship. Out of the 246 regularly enrolled students of law 26 had taken a bachelor's degree in the liberal arts and sciences; and, if to these are added the 42 juniors and seniors in the general and technical courses who elected certain law studies, there will be a total of 68 graduates (actual and potential) who are candidates for the degree in law, or 23 per cent of the whole number of law students.

In his report (see Appendix IV, p. xxxv) Judge Finch pays a well merited compliment to the teaching of Mr. Newman, whose professional engagements render it impracticable for him longer to aid the regular Faculty of Law in the work of instruction. Mr. Henry S. Redfield, of Elmira, New York, (see p. 15), whose preparation has admirably qualified him to teach procedure and practice, has been called to that professorship. The need of such a chair, now that students learn law in the schools, and the office routine, which in other days gave the novice a practical training, has been monopolized by the stenographer and typewriter, has long been apparent to thoughtful members of the profession. And it is highly appropriate that Cornell University, which has always stood both for theoretical and practical education, should in this as in other spheres divine the needs of the age and discharge for the learned and scientific professions of the day the functions their best members desire from the universities.

The excellent condition of the library is due to the painstaking and arduous labors of the librarian, Mr. A. H. R. Fraser, whose unselfish devotion to the University takes too little account of the need of rest and recreation for himself.

THE COLLEGE OF AGRICULTURE

There has been a large increase in the attendance in the College of Agriculture, there being 84 undergraduate students in 1897–98. Of the 30 new students who entered exactly half came from the State of New York. The median age (see p. 28) of freshmen at entrance rose from $20\frac{1}{12}$ years in 1896–97 to $20\frac{6}{12}$ years in 1897–98. While the regular courses of the College of Agriculture enrolled 56 students, who had duly passed the entrance examinations, and there were 28 pursuing definite special courses throughout the year, the winter course in agriculture was attended by 93 persons who were admitted without examinations. The members of this winter class returned to their parents' farms or secured employment in creameries or cheese factories. Students who complete the four-year course are wanted as directors of stations, professors, or managers of estates. Cornell University gives them all a free education.

The University is now aided in the work of agricultural education and investigation by the United States and the State of New York. This has enabled the University to establish throughout the State farmers' reading courses, in which there is now a membership of 4,600; to hold itinerant schools in rural communities; to supply leaflets on nature study to teachers in the public schools, of whom 15,000 are now on the list; to organize school children into clubs ("Cornell Junior Naturalists' Clubs") for the study of natural objects; and to supply teachers' of science for teachers' institutes and other gatherings of teachers. But, besides this direct instruction of teachers and pupils, there is the still more costly work of investigation and the dissemination of the practical results to farmers. Valuable experiments have been made during the year in the growing of sugar beets. Farmers have been reached by the bulletins, of which 11 were published during the year and mailed to 16,000 persons. For further details reference must be made to the unusually instructive report of the Director of the College of Agriculture (see Appendix v, pp. xxxvi–xl) with whose words this section may fittingly close: "It is doubtful if anywhere on this continent so extended, wide reaching and universal efforts are being made for the promotion of agricultural knowledge among all classes as are being made at the present time by Cornell University."

THE NEW YORK STATE VETERINARY COLLEGE

There were 16 students in attendance as against 11 in the preceding year. The median age (see p. 28) of new students rose from $20\frac{5}{12}$ years in 1896–97 to $21\frac{8}{12}$ years in 1897–98. Prospective veterinarians must now be graduates of a high school or have an equivalent general education before entering any veterinary college in New York State; but they will soon adapt themselves to this elevation of the scholastic standards of the profession, and a steady increase in the attendance may be looked for. This advance of the entrance requirements and the extension of the course to three years—improvements always championed by Cornell University and embodied at its institution in the State Veterinary College—will have the effect of raising the trade of the "horse doctor" into the profession of the scientific veterinarian. And this improvement in the status of the profession will be accompanied by a change almost revolutionary and in the character of the practitioners. Only the scientifically trained expert will hereafter be permitted to prescribe for the flocks and herds of the commonwealth. The difference between the recent past and the near future is brought out by the following statement from Director Law's report:

"It is gratifying to be able to state that all our graduates of 1897 passed the Regents' examination for license to practice, receiving very high marks, while of all candidates from other schools, who have appeared before the Regents' board in the past three years, only one-fourth received marks high enough to permit the granting of a license. One of our graduates secured the highest marks granted by the Board of Regents' Examiners, and, among thirty-two candidates only four reached the grade attained by our poorest graduate. We may therefore justly claim that we have already achieved the object of our foundation—the improvement of veterinary education—and we may confidently hope to raise the character of the whole veterinary service of this State and incidentally of others."

Besides instructing veterinary students the Faculty of the College have provided one course for the winter students in agriculture, and a number of students registered with the Faculty of Arts and Science have been permitted to elect courses intended for students in Veterinary Medicine.

By the terms of the charter of the State Veterinary College investigation was recognized as one of its functions. During the year there has been considerable special investigation into epizootics, mainly at the request of the commissioner of agriculture. Mallein and tuberculin have been prepared for diagnostic purposes in the work of the Tuberculosis Commission and of approved veterinarians, to whom they are furnished at the cost of packing and shipping.

The Roswell P. Flower Library, purchased from a gift of $5,000 received from Ex-Governor Flower, gives the college superior library facilities among the schools of the continent. Besides securing the best modern literature on the subject, which supplemented the contents of the University library, the College also purchased the library of the late Dr. John Busteed, founder of the New York College of Veterinary Surgeons, which contained a number of rare and valuable books, classic folios of descriptive, artistic and surgical anatomy. For further information concerning the State Veterinary College, and more particularly for details regarding its several departments, see the report of the Director (Appendix VI, pp. XLI–XLV).

THE COLLEGE OF ARCHITECTURE

The registration in the College of Architecture comprised 53 undergraduate students as against 51 in 1896–97. Of this number 11 were new students, of whom 9 were from the State of New York. The median age (see p. 28) of new students rose from $19\frac{5}{12}$ years in 1896–97 to $19\frac{8}{12}$ years in 1897–98. The new course and method of instruction described in last year's Report (pp. 45–6) have been in operation throughout the year, and have stood the test of experience to the entire satisfaction of the Faculty. Public exhibitions and criticisms of the students' work as well as competitions with other institutions have awakened a keen interest and evoked a healthy rivalry. Nowhere in the University has there been more devoted and more enthusiastic work.

The museum of casts has been thrown open to the classes in freehand drawing and modeling ; and in imitating the severe lines of classic beauty the students at the same time get a new insight into the relation of sculpture to architecture. The next desideratum is to provide for drawing from the nude.

A further elevation of the entrance standard has been voted by the faculty during the year, to go into effect in 1900.

This new legislation provides that each applicant for admission must present a Regents' diploma or certificate of graduation from an approved preparatory school, or, failing this, that he must, in addition to satisfying the requirements hitherto in force, pass examinations or present acceptable certificates covering an amount of work equivalent to three years' time in a single subject in a preparatory school of approved standing. For the additional work a free choice will usually be allowed among the subjects taught in preparatory schools, but physics, chemistry, geology, freehand drawing, and the second modern language (French or German) are recommended as most suitable for students entering on the study of architecture.

A special travelling fellowship of the annual value of $1,000 was established. The conditions of the competition have been fully advertised, and the appointment of a fellow is to be made in the beginning of the fall term of 1898–99. Unfortunately this fellowship is still unendowed; but perhaps some benefactor will be willing to provide a fund of $20,000 as endowment. The architect's materials are in the Old World; so that no travelling fellowship can better justify itself than one in architecture.

The needs of this College are large. Its ideal is to become a College of Fine Arts, in which painting and sculpture should be coordinate departments with architecture. Such a College, dedicated to beauty, crowning the beautiful campus of Cornell University, would be an invaluable supplement to its already existing institutions of liberal and practical education and a much needed corrective to the prevailingly utilitarian note of American civilization.

For other details concerning the work of the College of Architecture reference must be made to the report of the professor in charge (Appendix VII, pp. XLV–XLVIII).

THE COLLEGE OF CIVIL ENGINEERING

The number of undergraduates enrolled in the College of Civil Engineering was 179. For the four preceding years the numbers were: 116 in 1893–94, 122 in 1894–95, 121 in 1895–96, and 150 in 1896–97. The remarkable advance in the attendance of the last two years is undoubtedly due in part to the severer demands which in and after 1898–99 are to be made of candidates for admission. The normal attendance on this higher plane will be established in a year or two; but in 1898–99, the first year of the enhanced entrance requirements, a considerable decline from the present figures may be looked for.

Another advance in the entrance requirements, to take effect in 1900, was made by the Faculty during the year. This change, which was suggested in the Report of 1896–97, consists of an amount of work equivalent to a course of three years' duration in a single subject in preparatory schools of approved standing; combinations of the following subjects being recommended as most suitable for entrance to the Course in Civil Engineering: (a) history, or additional English language or literature; (b) additional modern languages and literatures; (c) freehand or linear drawing; (d) chemistry, botany, zoology, descriptive astronomy, or additional physiology; (c) Latin or Greek.

Of the 179 undergraduates in attendance in 1897–98, 79 were new students. Of these, 44 came from the State of New York and 35 from other states and foreign countries. The median age (see p. 28) of freshmen was 19 years and 8 months.

Students in all courses of engineering and architecture receive a large portion—nearly one half—of their training in the Academic Department. And, as still further illustrating the interdependence of the several divisions of the University, and in justice to the College of Civil Engineering, it is well to mention that the students in the Courses of Mechanical and Electrical Engineering and Architecture go to the College of Civil Engineering for the subjects of mechanics and descriptive geometry.

The great hydraulic laboratory in the Fall Creek Gorge has been completed at a large expenditure. The Director of the College describes it as a "huge engine of possibilities," and points out that large appropriations will be needed for its effective use. As the work to be done is absolutely new, the nature of the apparatus cannot be anticipated. Designs will be developed with the evolution of the laboratory itself. This method will be the most prudent, the least wasteful, and the most promising of results. At best, however, all scientific investigation is costly. The laboratory has been put in charge of Professor Gardner S. Williams, whose special qualifications for the work are noted on p. 15. The investigations to be conducted in this laboratory were described in detail by Director Fuertes last year (see the Report for 1896–97, Appendix VIII, pp. XL–XLI). The results of the researches to be conducted here will soon, it is safe to say, be indispensable to the hydraulic engineer, whether he works upon river and harbor improvement, upon city water-works or sewer construction, or in any other field in which hydraulic engineering is upon a large scale. It is a matter of satisfaction that in Professor Williams has been found a man properly equipped for making the most of the laboratory.

THE SIBLEY COLLEGE OF MECHANICAL ENGINEERING AND MECHANIC ARTS

The total number of students enrolled in the undergraduate courses of Sibley College was 467, of whom 28 were college graduates. Of these (exclusive of 16 special students) 158 were new students, of whom 76 were from the State of New York and 82 from other states and foreign countries. The median age (see p. 28) of freshmen was $19\frac{5}{24}$ years as against $19\frac{2}{12}$ years in 1896–97.

There was a marked decrease in the number of M.E. degrees conferred at the last Commencement. In 1886, at the close of the first year of Director Thurston's appointment, 8 M.E. degrees were granted; in 1889, the number had risen to 32; in 1892, it shot up to 85; and in 1895, it was 87. In 1896 for the first time more than 100 candidates—110—received the M.E. degree, and in 1897 the number was increased to 125. In June last the number of M.E. degrees conferred was 87. The falling off is easily explained. The class of '97 was the last that entered Sibley College with low entrance requirements; and the class of '98 was the first that met the greatly enhanced entrance requirements which went into effect in 1894.

Undeterred by the reduction of numbers, the Faculty voted in the course of the year to make a still further increase in the subjects for admission to the College. This legislation, which is to go into effect in 1900, provides that the applicant for admission must present a Regents' diploma or a certificate of graduation from an approved school; or, failing this, he must, in addition to the requirements hitherto obtaining, pass examinations or present acceptable certificates covering an amount of work equivalent to three years' time in a single subject in a preparatory school of approved standing. For these additional requirements a free choice among the various subjects taught in approved schools will usually be accepted, but for Sibley College the subjects recommended are the alternate modern language (French or German), freehand drawing, physics, and chemistry.

The raising of the standards for admission has of course improved the preparatory training of matriculants; but it has also had the effect of raising the whole course of instruction to a much higher plane. In the opinion of the Director no good student who has honestly taken advantage of the opportunities now offered in Sibley College need fear rivals in later life "in any department of professional work, scientific or technical, theoretical or practical."

The development of Sibley College toward the realization of Director Thurston's ideal has been furthered during the year by the establishment of a Graduate School of Railway Mechanical Engineering, and the appointment, as Principal, of Professor Herbert Wade Hibbard (see p. 15). Students trained in the Graduate School of Marine Engineering and Naval Architecture have for some time been working in all the great shipyards of the country. If the new school meets with only an equivalent degree of success, it must become enormously useful to the engineering profession and to the country, in so far as the railway interests of the country surpass in magnitude those of its shipyards, and indeed of any other single field for the application of engineering skill. For the same reason larger attendance must be expected upon the courses in the Graduate School of Railway Mechanical Engineering than in the kindred department.

Graduates of Sibley College are in demand both as teachers and as experts in industrial establishments. Their high standing in the outside world is further attested by the fact that an abnormally large proportion of the junior members of the American Society of Mechanical Engineers come from Sibley College.

As during the last decade the attendance of students continuously and rapidly increased, so, in spite of the check due to the raising of the standards of admission, large accessions may be expected in the near future. Additional capital for buildings, apparatus, and professorships will then be indispensable. Indeed, at the present moment, progress is conditioned by gifts. But the history of technical education at Cornell University furnishes good grounds for hope, especially as (to appropriate Director Thurston's language) "it may now be safely asserted that nowhere else, and with no other form of investment, can capital supplied be made to give larger and more satisfactory returns than when invested in the furtherance of the great work here inaugurated."

The endowment of a research laboratory in railway mechanical engineering, in marine engineering, or in electrical engineering would be specially serviceable in the present stage of the development of Sibley College.

Interesting details regarding the work of the College will be found in the report of the Director (Appendix IX, pp. LI–LVI).

THE NEW YORK STATE COLLEGE OF FORESTRY

The existence of the New York State College of Forestry is due to the wisdom and farsighted economy of Governor Black, upon whose recommendation the legislature of 1898 passed "An act to promote education in forestry, to encourage and provide for the establishment of a College of Forestry at Cornell University, and making an appropriation therefor," which became law, by the governor's signature, March 26th, 1898. The Trustees of Cornell University, at a special meeting held April 14th, 1898, accepted this new trust and resolved "That this Board create and establish a College of Forestry, ... to be known as the New York State College of Forestry."

The act of the legislature in the first section authorizes the Trustees of Cornell University "to create and establish a department in said University to be known as and called the New York State College of Forestry, for the purpose of education and instruction in the principles and practices of scientific forestry." The second section provides for the purchase and use of thirty thousand acres of land in the Adirondack forests as a demonstration area, and it further provides that the College of Forestry "shall conduct upon said land such experiments in forestry as it may deem most advantageous to the interests of the State and the advancement of scientific forestry, and may plant, raise, cut and sell timber at such times, of such species and quantities and in such manner, as it may deem best with a view to obtaining and imparting knowledge concerning the scientific management and use of forests, their regulation and administration, the production, harvesting and reproduction of wood crops and earning a revenue therefrom." Lastly it makes a preliminary appropriation for the maintenance of the College during 1898–99.

The administration of the State College of Forestry is in the hands of Cornell University. The Trustees, therefore, having accepted this duty, initiated the organization of the new institution by the appointment as Director and professor of forestry of Dr. B. E. Fernow, the Chief of the U. S. Division of Forestry (see p. 23), and of Filibert Roth, of the same governmental bureau, as assistant professor of forestry and forest manager (see p. 24).

There have been arranged a full four-year course leading to a degree of Bachelor of the Science of Forestry, a one-year special course, and a one-term synoptical course. The four-year course is planned to give a thorough knowledge of all branches of the profession and to prepare men to manage and administer forest estates for private owners or for the state or national government, and also to teach the profession in the colleges, which are likely in the near future to establish chairs of forestry science and practice. This course comprises in its first two years the basal or preparatory studies of mathematics, natural science, engineering, political economy, etc., its last two years being devoted to the purely professional subjects. The one-year special course is planned for farmers, lumbermen, and others not desiring a general scientific training, but wishing to acquire such technical and practical knowledge of forestry as will enable them to manage more intelligently and economically their own woodlands. Finally, the one-term synoptical course will meet the requirements of students of political economy and others wishing to make a brief survey of the subject of forestry as a matter of general education.

The object of the New York State College of Forestry then is at once to create for America that profession of forestry which includes in European countries so many highly educated men, to give technical instruction to forest owners and their employees, and to give to educated men of other professions that intelligent general interest in the subject which is necessary to a healthy public opinion upon the care, preservation, and use of our forest properties. In all branches of this work, it need hardly be said, the most important single instrument of the College will be the thirty thousand acres of forest in the Adirondacks to be acquired according to the law providing for the establishment of the College. The greater portion of the teaching of the College will of course be done at the University, but every student who takes the degree of Bachelor of the Science of Forestry will have taken two summer courses of at least six weeks each in the forest; and a considerable portion of the instruction of the senior year, which is purely professional, may be given, if practicable, in the woods; besides which experiments and investigations will be continually carried forward upon the Adirondack area by the teachers of the College. By way of practical field instruction also, it is expected that trips for the inspection of lumber camps, logging operations, transportation methods, and mills will be very useful and regularly resorted to.

THE CORNELL UNIVERSITY MEDICAL COLLEGE

The event of the year, and one of the epoch-making events in the entire history of Cornell University, was the establishment of the Medical College. Ever since the University opened, its sanguine friends have dreamt of a medical department. But the treasury was always overdrawn for the support of existing departments and no benefactor came forward with an endowment for a department of medicine. It is true that from time to time proposals were received for the federation of independent medical schools in other cities, but such unions offered no prospect for the advancement of medical education, and the University shrank from even a nominal connection with proprietary institutions whose ultimate object was economic and financial, not scientific and educational. Such overtures were invariably rejected,—the final disposition of the last of them being the first business the President found awaiting him on coming into office in 1892.

But, if Cornell had no medical department, she cultivated with special zeal and assiduity those biological sciences which form the scientific foundation of the medical profession. Furthermore, this University recognized the indispensable importance of these sciences to the physician and surgeon at a time when—to quote from Professor Burt G. Wilder's writings, in 1875—students of medicine were accustomed to hear "lectures upon surgery without any knowledge of anatomy and upon therapeutics while ignorant of physiology." Indeed, within two years after its opening in 1868, Cornell University had arranged a four-year Course in Natural History leading to the degree of Bachelor of Science, which was well adapted to the needs of students who contemplated the study of medicine; and, in 1878, for such students as could not take this full course, a shorter two-year course was provided, in which a large amount of time was devoted to practical work in anatomy, physiology, histology, and chemistry. Thus Cornell University, from the beginning, has recognized and acted upon the first great principle of medical education—the principle so emphatically enunciated by Professor Huxley in his address to the medical students of University College, London: "I do not believe that all the talking about, and thinking of, medical education will do the slightest good until the fact is clearly recognized, that men must be thoroughly grounded in the theoretical branches of their profession."

The "theoretical branches" of the medical profession have been well taught in the scientific laboratories of Cornell University. And they must be even more fully and thoroughly taught in the future. But medicine is an art as well as a science. The practical part of the curriculum presupposes hospitals, clinics, and dispensaries, which exist in sufficient supplies only in a large city. If a medical course is given in a small city or village where these facilities do not exist, it is no better than the teaching of physics and chemistry without a laboratory. It follows, therefore, as a second principle of medical education, that for the purely professional subjects of the curriculum students should have access to the hospitals and dispensaries of a large city, which, in the case of Cornell University, should undoubtedly be the City of New York. The ideal arrangement would be for students to complete their scientific training in the extensive laboratories of the University at Ithaca and then take their professional branches under medical professors in New York who are entitled to utilize for teaching purposes the vast quantity and variety of clinical material found in the great city hospitals.

For Cornell University, therefore, situated as it is in a small city, the ideal of a medical department would be one which should be located in New York City, but which should at the same time utilize the scientific instruction offered in the Academic Department at Ithaca. In practice this means provision for a full four-year course in New York with the duplication at Ithaca of the first two years of the course—the scientific bases of medicine—anatomy, physiology, chemistry, bacteriology, histology, etc. For Cornell University, therefore, Huxley's saying is especially true, that "the question of medical education is, in a very large and broad sense, a question of finance."

Such is the ideal of a medical department for Cornell University, considered from the point of view of the curriculum. To complete the ideal it is only necessary to add that the department be a real part of the University, under the same government and control as other departments, and like them wholly independent (for salaries, etc.) of receipts from tuition.

Thanks to the generosity and wisdom of Colonel Oliver H. Payne this ideal is an actuality. A gift for the establishment and maintenance of a medical department of this University having been tendered to the Trustees by him, it was at a special meeting of the Board, held April 14th, 1898, voted to "establish a medical department in New York City to be known and designated as the Cornell University Medical College, of which a portion of the instruction may be duplicated in Ithaca." Six professors were then elected to chairs in the new department, to which were subsequently added five more members of the Faculty, and fifty-six clinical professors, instructors, clinical assistants, etc. With this teaching staff of sixty-seven in the Medical College, assisted by the professors in the scientific departments of the University, the new department will begin its first year on October 4th, 1898. By a reference to the biographical sketches given in an earlier portion of this Report (see pp. 18–23) it will be seen that the Cornell University Medical College starts upon its career with an instructing force which for teaching experience and for brilliancy of professional reputation it would indeed be difficult to excel in America. It should be added that limitations of space only, and the typical character of the eleven biographies given in this Report, have led to the omission of outline sketches of the many other notable appointees in the new department.

The organization of Cornell University lends itself easily to the management of a department in New York City. The President, who is *ex-officio* presiding officer of all Faculties, will attend the stated meetings of the Faculty of Medicine, which is charged with the educational administration of the College. The business administration is entirely in the hands of the Board of Trustees of Cornell University. But, following a precedent already established in connection with some of the other colleges of the University, the Board of Trustees have established for the Medical College an advisory council, consisting of the Dean and two members of the Faculty of Medicine, three Trustees (who are residents of New York), and the President of the University, as chairman, whose duty it is to digest all business affecting the Medical College and make recommendations thereupon to the Board for formal action. This body is called the Medical College Council.

All the advantages of Cornell University, rural and urban, will be combined for the fortunate student of the science of medicine. The great hospitals of New York City, with which an unusually large proportion of the Faculty are connected in the capacity of surgeons or physicians, make it imperative that the last two years of the course should be taken by all students of the College in that city, where the opportunities of clinical instruction are literally unsurpassed. The Faculty of the Cornell University Medical College is entitled to utilize for teaching purposes the clinical material of the Bellevue, City, Maternity, Gouverneur, Harlem, Almshouse, Work-house, Incurables, Randall's Island, and Fordham hospitals, besides many other hospitals and dispensaries in the city upon whose visiting staffs the Medical Faculty is represented. On the other hand in the great scientific laboratories already existing on the University campus at Ithaca are opportunities of instruction in the sciences underlying the profession of medicine, and embraced in the first two years of the curriculum, which are not surpassed in this country, if indeed they are anywhere equalled. It is expected therefore that a large proportion of students of medicine, aside from those whose homes are in New York, and including all women students, will take the first half of the course at Ithaca, sharing fully in all student activities, and enjoying the advantages of residence at and study in a great University, with its broad outlook over all the fields of human knowledge, academic, scientific, technical, and professional; while the whole body of students in this department will nevertheless be united during the latter half of the course for professional instruction given directly, by the foremost experts, in the hospitals of the City of New York.

To the student, too, who aims to excel in his profession, and to that end is not contented with completing the bare minimum of work necessary to obtaining his professional degree, Cornell University offers further encouragement. In the Academic Department the student has absolute liberty in the choice of studies. So that if the future medical student enters that course he may, while cultivating letters and philosophy, at the same time master thoroughly his anatomy, physiology, histology, chemistry, physics, and botany, and at the end of four years receive his A.B. degree. There then would remain of the medical curriculum only the professional branches, which he could compass in the next two years in New York City. Thus, thanks to the elective system, he would win both the A.B. and the M.D. degrees in six years—though each separately requires four years.

A building in the grounds of the Bellevue Hospital has been leased from the Commissioner of Charities for the use of the Medical College during 1898–99. A site for the permanent home of the department has been purchased at a cost of $150,000. It comprises the entire First Avenue front of the block lying between Twenty-seventh and Twenty-eighth Streets, a space of 100×200 feet. The College building, of which the architects are Messrs. McKim, Mead & White, will occupy the whole of this space. It is to be a fireproof structure, five stories high, the distance from sidewalk to cornice being about eighty-five feet. It is designed in the Renaissance style, and will be constructed of either Indiana or Joliet limestone and red brick. The entrance to the main building and to the dispensary will be marked by two pedimented bays, having engaged columns running through three stories. The cost of the new building will undoubtedly be three or four times the cost of the site.

The interior of the building will be simple and severe in character, but the architects have been directed to spare no expense in fitting it for the purposes of medical instruction. Portions of the first and second stories will be occupied by the dispensary, which will be the largest and most complete in New York City, and the large theatre will occupy a space of 40×50 feet running up through the two stories. The dispensary will contain waiting rooms for the two sexes, small theatres for operations, and separate rooms for surgery, throat, nose, eye, and ear diseases, apothecary, etc. There will also be upon the first floor the main entrance, vestibule, hall, staircase, and elevators to the upper stories, reception rooms, professors' offices, Dean's office, clerk's office, and reading rooms. On the second floor, besides the dispensary and upper half of the large theatre, will be rooms for skin diseases, orthopædics, orthopædic workshop, gynæcology, and two theatres for demonstrations. The third floor will contain the physiological and chemical laboratories, recitation rooms, amphitheatres, and private laboratories, and professors' rooms. The workshop, museum, room for preparing and mounting museum specimens, manikin room, materia medica laboratory, bacteriological laboratory, room for operative surgery and bandaging, elevators, and lavatories will occupy the fourth floor. The dissecting rooms are to be upon the fifth floor, along with the prosecting room, private dissecting room, students' reading room and study room, lavatories, demonstration theatre, etc. In the basement, besides boiler room, etc., will be the storage rooms of the various departments and the cold storage room.

SAGE COLLEGE

Co-education is so firmly established and so thoroughly accepted at Cornell University, it is so much a fundamental idea of the institution, that any reasoning in favor of the principle, or vindication of it drawn from experience, could not but seem a wasteful and ridiculous excess of words. There is no call even to discuss the workings of the system, as the presence of women at Cornell on equal terms with men has not created any specific problems for the authorities of the University.

Thanks to the wise and farsighted generosity of Henry W. Sage the women students enjoy one advantage hitherto denied to men students : theirs is the privilege of common life in a residential hall. The enlargement of Sage College by the addition of the Annex and of the Sage College Cottage (which was occupied for the first time in 1897-98) has been described in previous Reports. The reasons for the creation of the new office of Warden of Sage College and the qualifications and duties demanded of the incumbent were given in the Report of last year (pp. 39-40). The President is happy to testify to the remarkable success which Miss Brownell has achieved in this delicate and responsible position. Her first annual report as Warden of Sage College, which will be found in Appendix x, pp. LVI-LXI, will be read not only with lively interest but also with great satisfaction by all the friends of Cornell University.

The increase in the popularity of Sage as a home for the women students is a characteristic note of the general improvement. The Trustees have seconded the efforts of the Warden, having, on her recommendation, spent $835 in redecorating and partially refurnishing and refitting the drawing room. It will be seen that further expenditures to secure beautiful and refined surroundings for the women students are desired by the Warden, and the President is glad to report that the redecoration of the dining room has been completed during the summer. The utmost liberality has also been shown in granting the Sage College Gymnasium to women students for social entertainments and receptions. Seeing that all things at Sage are theirs, and for their sake, the women students themselves have cordially joined with the Warden in imposing such restrictions as experience shows to be necessary for the general interests of the community.

For details regarding the academic work and the social life of the women students reference must be made to the Warden's report. The problem of government, which has not been a difficult one, has been facilitated by the system of elective proctors. This is an important step in the direction of self-government, which, in itself the ideal, is, as the Warden reports, the goal towards which Sage College is actually moving.

There is one urgent need at Cornell which the friends of the higher education of women ought to be willing to supply. More than young men even, young women are prone to injure their health by overwork. The University requires both to take physical training and provides the requisite gymnasiums and accessories. But this is not enough. Outdoor sports, which gratify the play impulse, are a far better recuperative than compulsory drill or gymnastic exercise. For baseball, football, and track athletics the young men have the use of Percy Field ; for rowing they have boats and a boathouse. None of this property is owned by the University ; none of it has been derived from the University treasury. It has been secured from the friends of athletic sports ; and the title to it is vested in the Cornell University Athletic Association. Is there not some beneficent woman of means who would like to purchase and fit up for the women students of Cornell University a field for playing basket-ball ? And if gifts were secured for boats and a boathouse, who knows whether women students might not be permitted to row on the new lake between Triphammer Falls and Forest Home? Apart from scholarships to aid the meritorious and needy, there is no greater service that could be rendered to the earnest and studious women who come to Cornell University than the provision for them of such means of recreation as are afforded by basket-ball, tennis, bicycling, rowing, etc.

Miss Canfield, the instructor in physical culture at Sage College in charge of the gymnasium for women, reports that she was enabled last fall for the first time, by the assistance of Dr. Elma Griggs, to give a thorough physical examination to each student entering the gymnasium, and could thus prescribe exercise much more definitely. In many cases illness was prevented by this opportunity given students to consult a physician free of charge. This year, for the first time, during the first four weeks of the fall term and last four weeks of the spring term, outdoor work, in the form of basket-ball, tennis, and rowing took the place of the required gymnasium work,—only a few who did not care to join any of these sports going to regular class exercises.

THE LIBRARY

The University now possesses 211,278 volumes and 35,000 pamphlets, of which 13,816 volumes and 1,500 pamphlets were added during the year. The accessions to the general library numbered 11,386 volumes, of which 2,790 were received as gifts. The principal donors were Professor S. G. Williams, Willard Fiske, Hon. A. D. White, the Duc de Loubat, and Ex-Mayor W. L. Strong, though valuable gifts have been received from other sources, among which may be mentioned the national and state governments and the British and Canadian Patent Offices.

Hon. A. D. White presented to the Library the receipts of the first year's sales of The Warfare of Science, amounting to $1,475. It will be used by Professor Burr for the enrichment of the President White Library in the fields covered by The Warfare of Science or in the larger field of general civilization.

The Sage Endowment Fund is of course the principal reliance of the Library. From the income of that fund have been purchased during the year many costly works and important collections, including Migne's Patrologia Graeca, the English Geological Survey Memoirs, Maps, and Sections, and a number of Spanish books and documents as well as sets of the Calcutta Review and the Journal Asiatique;—the latter suggesting new points of interest in the American historical horizon. In the Librarian's report (Appendix XII, pp. LXXIII–LXXVII) will be found a much fuller list of these purchases.

Hitherto the general library closed at half past nine in the evening. Since the seventh of February it has been open till eleven; and the Librarian reports a marked increase in its use. More and more the Library becomes the active centre of the scholarly life of the University. In 1892–93 the total recorded use of the Library was 47,685 volumes; in 1897–98 it was 103,560 volumes. The unrecorded use, which is undoubtedly much greater than the recorded, is probably growing at the same rate. It is made possible by the deposit of 6,000 volumes in the great reading room of the Library, of 5,218 volumes in the various seminary rooms, and of 6,787 in departments outside the library building.

For the first time since 1891 an inventory was this year made of all the books in the stacks. It showed 420 volumes missing. This fact, taken with the further discovery of 2,450 volumes out of place, emphasizes the importance of the Librarian's suggestion that additional restrictions are necessary upon admission to the stacks, and that those who enjoy the privilege should be instructed how to use so as not to abuse it.

Is the Library to be one of circulation or reference? Hitherto there seemed little doubt; for none but members of the Instructing Staff, including fellows, were permitted to draw out books for use at home. By the concurrent action of the University Faculty, the Library Council, and the Board of Trustees, this privilege was in January last extended to all graduate students who are candidates for advanced degrees. Is the privilege to be further extended to seniors, and by degrees to all undergraduates? In favor of such extension is the practice of some of the leading American universities, and the arguments by which they justify it. There are, however, weighty reasons against it, some of which are strongly felt by the scholar and investigator, while others appeal with not less force to the man of affairs. The Librarian deprecates any further action at the present time; and it seems only just to him, as well as prudent in itself, to give the new arrangement a fair trial before even the discussion of any further modification. For his views on this subject, and for more detailed information concerning the Library in general, the Librarian's report should be consulted (see Appendix XII, pp. LXXIII–LXXVII).

SAGE CHAPEL AND BARNES HALL

Effectual steps have at last been taken to obviate for the future the state of things described in the last Report (see Report for 1896–97, p. 51) as existing in Sage Chapel. Extensive alterations, under the direction of Professor Babcock as architect, have been made in the Chapel during the past summer, which have doubled the previous seating capacity of 400. In this alteration the eastern half of the nave, the south transept, and the tower have been removed, and in their place there have been added two adjacent transepts covering a space of 64 x 66 feet, unobstructed save by two ten-inch iron columns. The elevations show two gables on the north side and two on the south, each gable containing a rose window of ten feet diameter, with stone tracery. Four new porches are provided. The roof frames are of open timber construction, in Georgia pine, the arched trusses springing from corbels on the walls, and from the caps of the iron columns. Careful arrangements have been made for heating, ventilating, and electric lighting of this space.

Carried on simultaneously with the enlargement of the Chapel has been the construction, at the eastern end of the building, of a semi-octagonal apse, erected by the University as a memorial to the original donor of the Chapel, the late Hon. Henry W. Sage, whose remains, with those of his wife, are to be permanently deposited there. The apse is 31 feet wide by 16 feet deep, and opens into the main building by a massive cut stone arch. In the east wall of the apse has been placed the stone tracery window which was in the end of the original Chapel. The interior walls, from window-sills upward, are of stone. The oaken ribs of the ceiling are carried on stone columns with carved capitals, supported by corbels. In detail the architecture of the addition corresponds to that of the original building, but the general effect within and without will be entirely changed.

Coincidentally with these additions, the organ given by Mr. William H. Sage has been rebuilt and much enlarged, the number of stops being nearly doubled. It has at the same time been provided with the latest and best devices in the way of electro-pneumatic action, water motors, etc.

The Cornell University Christian Association has as usual been an effective religious force in the University. The commodious and comfortable reading room of Barnes Hall continues to be much used by students, who not only read its file of daily, weekly, and monthly publications, but frequently study there, and also in the Barnes Hall library. The new catalogue of the library shows the continued generosity of General A. C. Barnes. Class receptions have been held in Barnes Hall as usual, and the Association has published its customary handbook of information useful to new students. The Association reports an increase of 20 per cent in membership during 1897–98, which, following as it does upon an increase of 30 per cent during 1896–97, is striking testimony to the success of their work.

THE CORNELL INFIRMARY

Reference has already been made to the gift by Messrs. Dean Sage and William H. Sage of the mansion of their late father, with an endowment of $100,000, as an infirmary for the use of sick students. The donors stipulated that it should be called "The Cornell Infirmary;" an act of self-effacing generosity which has the effect of associating Mr. Sage's memory with that of his friend, the Founder of the University, of which he was the principal benefactor. During the summer the Messrs. Sage have at their own expense transformed the house into an infirmary, equipped it with all necessary appliances, and completely furnished it. The building, which stands on State Street, on the plateau midway between the valley and the University, is a structure of Medina brownstone 96 × 88 feet, including verandas and porches, and three stories in height, besides a basement. A wide hall runs through the first floor from south to north, having on the right a sitting room for young women, the dining room, pantry, and kitchen ; on the left the library, which will be used as a sitting room for young men, the matron's office, bath room, lavatory and telephone closet, and an emergency room. On the second floor are four large rooms for the sick, two nurses' rooms, two large bath rooms, a small nurses' kitchen, a large room for surgical work, with an instrument room containing sink, cold and hot water, and a slop closet, not connected with the bath rooms. On the third floor is the matron's room, two large rooms for patients, two nurses' rooms, three servants' rooms, a bath room, nurses' kitchen, slop closet, store rooms, linen closets, etc. The basement contains a laundry, servants' bath room, and the heating apparatus.

The house is supplied throughout with both gas and electric lighting, and heated by a system of hot water. The height of the rooms in the first story is 12½ feet in the clear ; that of the rooms in the second story is 11 feet ; and the rooms on the third story are 10½ feet in the clear. There is also a high attic. There is a balcony opening from one third-story room, upon which a bed can be rolled, and there are large verandas.

The Infirmary will be organized with a staff consisting of a head nurse, with one or two assistant nurses, and a matron who will have for the work of housekeeping a cook, a housemaid, a laundress, and a man for general work. Though the Infirmary is endowed, it is not a charity. The rates for 1898–99 are a dollar a day, which covers all charges except doctor's bills and (when it may be necessary) the cost of special, separate nursing. Sick students, who are unable to pay the Infirmary bills (which, however, must in every case be presented), may receive aid from the Woman's Guild endowment fund and other sources ; so that want of money does not close the Infirmary doors to any suffering student.

Thus the home of the late Chairman of the Board, whose life was a benediction to Cornell University, has become a place of rest, comfort, and healing to its sick and suffering students for all generations.

BUILDINGS AND GROUNDS

The enlargement of the Chapel has already been described (p. 55). The hydraulic laboratory, described in last year's Report, has been completed.

For the purpose of meeting the rapidly increasing needs of the chemical department for additional laboratories and class rooms an appropriation of $55,000 has been voted, and a new building is to be erected, parallel to and north of the present Morse Hall, with which it will be for the present connected only by a two-storied bridge. The new building, of which Vivian & Gibb are the architects, is to be 65 × 130 feet, containing sub-basement, basement, first and second floors, and will about double the space at the disposal of the department. It will be of brick, conforming architecturally to Morse Hall. Especial attention is being given to ensure ventilation as nearly perfect as possible, by means of forced draught. Each several "hood," in the new building will be separately ventilated by an exhaust fan located in the attic. The sub-basement will contain two constant-temperature rooms, workshop, dynamo room, ore crushing room, and a room for the ventilating fan, heating coils, etc. The basement and first floor will be occupied by the department of inorganic chemistry. The former will contain an electric furnace room, rooms for gas analysis, two large assay laboratories, two fireproof combustion rooms, and a large "stink" room. Upon the first floor will be provided the office and private laboratory of the professor of inorganic chemistry, museum, spectroscopic laboratory, photographic and mercury rooms, a lecture room with sixty-five seats, and the research laboratory for inorganic chemistry. Physical chemistry will occupy the second floor, with private and research laboratories, balance room, three large laboratories (one designed especially for electro-chemistry), and a lecture room for sixty-five students.

Professor Rowlee has hitherto had charge of the *ornamentation* of grounds. During the year the care of the lawns, walks and drives was also committed to him,—the office of Superintendent of Buildings and Grounds being left unfilled on the retirement of Mr. Jacob Peters, who for some years past had filled it with great fidelity. The consolidation of the responsibility for both the mechanical labor and the artistic work on the grounds in the hands of a single expert is in the nature of an experiment, which, however, has thus far proved quite successful. Superintendent Rowlee has been carrying out the plan which he submitted two years ago to the Committee on Grounds and which was then approved. His greatest need at the present time is additional space for bedding stock. But the most has been made of existing facilities. A laurel plantation has been started between Cascadilla Place and the new bridge ; and it is proposed to extend this plan of aggregating similar kinds of shrubs in particular regions. New ash and gravelled paths have been made across the campus. Among other excellent suggestions, the Superintendent recommends that in some artistic way the delimitation of the University campus from surrounding grounds should be effected.

HALLS FOR STUDENTS

No provision is made by Cornell University for the social life of the men students. The women students have a beautiful home in Sage College. But for the men there is nothing. In the absence of halls of residence for students Greek letter fraternities have sprung up ; but, cordially as these are to be welcomed, they cannot take the place of university halls, for they rest on an entirely different, and indeed antagonistic, principle. A residential hall is open to every student ; a fraternity house is closed to all except the few who are invited to become members. The one is democratic, the other selective. Hence, if one looks deep enough, it will be apparent that the more fully developed the system of Greek letter fraternities at a university, the greater is the need of residential halls. And if, in addition to such halls, there were a dining hall in which the men from the fraternity houses and men from the public halls took their meals together, the arrangement would make for democracy and fraternity and tend to eliminate cliquishness and social sectarianism. If, furthermore, there were a club or common room contiguous to the dining hall, to which students might resort after meals, and in which they might associate during the intervals of relaxation, enjoying together the amenities of social intercourse, the plan would be a well nigh ideal one. And how much education and culture—social, intellectual, moral, and political—the students would derive from one another, created, as it were, from the mere circumstance of their coming together! This inexhaustible potency is at present entirely lost at Cornell University, though it is of the highest value in the education of young men.

The dream of residential halls, dining hall, and club or common room will undoubtedly one day be fulfilled at Cornell University. What a charming situation for them is offered below Central Avenue, which, while bordering the main thoroughfare on the campus, yet looks out peacefully on Cayuga Lake and the western hills! No other university in the world possesses such a site of romantic beauty for a dozen or more halls of residence and, crowning them, a stately dining hall and common room. The man of means who first avails himself of this unique æsthetic, architectural, educational, and social opportunity will write his name large among the benefactors of Cornell University and in enduring memory on the hearts of its students and graduates.

In the past it was widely believed that Cornell University did not desire dining and residential halls for its students. But all doubt has been dispelled by the action of the Board of Trustees, who, on February 23rd, 1898, voted unanimously in favor of "the establishment of halls of residence at the University whenever gifts are received for the purpose." And, so far as the club house is concerned, the alumni have already instituted a competition for sketch plans and, on the adoption of a final plan, will take energetic measures to raise $150,000 for an alumni hall.

The University has many other needs—endowments for professorships, a loan fund for students, a language hall, better provision for physiology, anatomy, and the other theoretical branches of medicine—but at the present time the President desires to accentuate the importance, for the spirit of the University as well as for the life and culture of its students, of a great system of halls of residence, with the conjoined features of a dining hall and club house.

FINANCES

It appears from the Treasurer's report that the donations received during the year amount to $197,126.02. The total income, including the State appropriations of $25,000 for the State Veterinary College and $35,000 for the College of Agriculture, was $643,050.73. The total interest-producing funds of the University amount to $6,446,818.21. Deducting for cash, foreclosure account, etc., $246,418.80, there remained invested, on August 1st, $6,200,399.41, which bore the average rate of interest of 5.825 per cent. This is a high rate of interest for the present time; and it tends to decline as old investments fall in and are placed anew. Over four million dollars—$4,027,368.52—are invested at 6 per cent; and not more than 5 per cent can be expected when, as will happen within a few years, these funds are re-invested. Consequently Cornell University must appeal to the friends of liberal and practical education to come to its support now and in this generation as they have done in the past. Every benefactor of Cornell University has felt that his investment here was a good one—paying in the best sense of the term, as the fund has been well managed, and its fruit has been the education and elevation of the race. The record of the University, both educational and financial, is submitted to the public with the utmost confidence. An exhaustive exhibit, covering the entire period of the existence of the University, will be found in the President's Commencement Day Address: *A Generation of Cornell* (*1868–1898*).

The Trustees are referred for further details concerning the several departments of the University to the Appendices, which contain the reports of the Deans of Faculties, Directors of Colleges, Librarian, etc., and form an indispensable supplement to the President's Report.

J. G. SCHURMAN

President

APPENDIX I

CHANGES IN THE STAFF OF INSTRUCTION

The following changes were made in the staff of instruction to take effect, unless otherwise stated, at the date of appointment:

C. H. Benedict, Instructor in Analytical Chemistry, *vice* F. D. Smith, resigned, September 21, 1897.

G. P. Knox, Assistant in Chemistry, *vice* C. H. Benedict, promoted, September 21, 1897.

J. M. Talmadge, Assistant in Chemistry, *vice* G. P. Knox, promoted, September 21, 1897.

J. Segall, Instructor in French, *vice* C. P. Vergauven, resigned, September 21, 1897.

T. Hall, Instructor in Machine Design, *vice* E. T. Adams, resigned, September 21, 1897.

C. W. Furlong, Instructor in Industrial Drawing and Art, *vice* E. T. Brauner, resigned, September 21, 1897.

E. J. McCaustland, Instructor in Civil Engineering, *vice* C. W. Comstock, resigned, September 21, 1897.

B. S. Monroe, Assistant in English, September 28, 1897.

Elma Griggs, Medical Examiner at the Sage College Gymnasium, October 5, 1897.

F. K. Cameron, Research Assistant in Physical Chemistry, October 12, 1897.

G. N. Lauman, Assistant in Horticulture, October 26, 1897.

I. W. McConnell, Assistant in Civil Engineering for the fall term, *vice* Instructor E. B. Lovell, ill, November 2, 1897.

G. A. Miller, Instructor in Mathematics, November 22, 1897.

H. C. Troy, Assistant in Dairy Laboratory, December 14, 1897.

D. Irons, Lecturer in Philosophy, January 11, 1898.

C. B. Curtis, Assistant in Chemistry for the winter and spring terms, *vice* J. N. Talmadge, resigned, January 25, 1898.

R. J. Stanclift, Demonstrator in Anatomy in the State Veterinary College, January 25, 1898.

H. C. Fairbanks, Assistant in Sibley College, (to take effect February 15, 1898) *vice* M. W. Roe, resigned, March 8, 1898.

C. W. L. Filkins, Instructor in Civil Engineering, *vice* J. F. Hayford, resigned, April 5, 1898.

J. W. Spencer, Deputy Chief of the Bureau of University Extension in Agricultural Knowledge, March 15, 1898.

Mary Rogers, Instructor in Nature Study, March 15, 1898.
Julia Z. Kelly, Stenographer in Bureau of University Extension in Agricultural Knowledge, March 15, 1898.
H. P. Gould, Assistant in charge of spraying-experiments in various departments for six months, March 15, 1898.
W. Miller, Assistant in Horticulture for six months, March 15, 1898.

A. F. Weber, Assistant to the Registrar and Compiler of the Ten-Year Book, *vice* F. S. Crum, resigned, November 2, 1897.

C. D. Bostwick, General and Legal Assistant to the Treasurer, January 25, 1898.
Edith A. Ellis, Loan Clerk in Library, February 1, 1898.
C. E. Cornell, Librarian of the State Veterinary College, March 8, 1898.

The following changes have been made in the staff of instruction, the appointments to take effect, unless otherwise stated, at the beginning of the year 1898–99:

S. G. Williams, Professor of the Science and Art of Teaching, *Emeritus*, October 30, 1897.
Charles DeGarmo, Professor of the Science and Art of Education, *vice* S. G. Williams, resigned, February 23, 1898.
J. H. Barr, Professor of Machine Design, advanced from an associate professorship, February 23, 1898.
Henry S. Redfield, Professor of Practice and Procedure in the College of Law, June 15, 1898.
H. W. Hibbard, Assistant Professor of Mechanical Engineering of Railways, and Principal of the Graduate School of Railway Mechanical Engineering, February 23, 1898.
O. M. Brauner, Assistant Professor of Architecture, advanced from an instructorship, March 8, 1898.
E. W. Olmsted, Assistant Professor of Romance Languages, advanced from an instructorship, May 17, 1898.
H. N. Ogden, Assistant Professor of Civil Engineering, advanced from an instructorship *vice* F. P. Spalding, term expired, May 17, 1898.
D. S. Kimball, Assistant Professor of Machine Design, *vice* H. D. Williams, resigned, Aug. 10, 1898.
James Seth, Sage Professor of Moral Philosophy, resigned, May 17, 1898.
Alfred Emerson, Associate Professor of Classical Archæology, term expired, August 1, 1898.
J. T. Newman, Lecturer on Practice and Procedure in the College of Law, term expired, June 16, 1898.

D. A. Morton, Instructor in Organic Chemistry, term expired, June 16, 1898.
E. M. Chamot, Lecturer on Analytical and Sanitary Chemistry, *vice* Professor L. M. Dennis while absent on leave, March 8, 1898.
David Irons, Instructor in Philosophy, March 1, 1898.
I. M. Bentley, Instructor in Psychology, advanced from an assistantship, April 5, 1898.
Heinrich Ries, Instructor in Economic Geology, *vice* Assistant J. E. Bonsteel, term expired, April 12, 1898.
H. E. Dann, Instructor in Music, May 9, 1898.
G. L. Hoxie, Instructor in Electrical Engineering, *vice* I. J. Macomber, term expired, May 17, 1898.
B. M. Duggar, Instructor in Botany, May 17, 1898.
C. H. Rammelkamp, Instructor in American History, advanced from an assistantship, May 17, 1898.
C. D. Child, Instructor in Physics, *vice* Assistant G. L. Hoxie, May 17, 1898.
I. W. McConnell, Instructor in Civil Engineering, *vice* E. B. Lovell, term expired, July 12, 1898.
A. C. White, Instructor in Greek, July 12, 1898.
Marcus Simpson, Instructor in German, *vice* H. P. Jones, resigned, August 10, 1898.
Edgar Kay, Instructor in Civil Engineering, *vice* H. N. Ogden, promoted, August 10, 1898.
W. N. Barnard, Instructor in Machine Design, *vice* A. T. Bruegel, resigned, August 10, 1898.
B. S. Lanphear, Instructor in Experimental Engineering, *vice* C. E. Houghton, resigned, August 10, 1898.
G. M. Whipple, Assistant in Psychology, *vice* I. M. Bentley, promoted, April 5, 1898.
A. L. Andrews, Assistant in English, *vice* Instructor W. Strunk, Jr., term expired, May 17, 1898.
H. L. Powers, Assistant in Elocution and Oratory, and H. C. Allen, Assistant in Elocution and Oratory, *vice* J. R. Lewis, term expired, May 17, 1898.
O. W. Brown, Assistant in Chemistry, *vice* A. E. Taylor, term expired, May 17, 1898.
W. A. Murrill, Assistant in Botany, May 17, 1898.
G. T. Hastings, Assistant in Botany, May 17, 1898.
H.. Diederichs, Assistant in Experimental Engineering, *vice* H. C. Fairbanks, term expired, May 17, 1898.
F. R. Wright, Assistant in Bacteriology, May 24, 1898.
B. D. Myers, Assistant in Comparative Physiology, June 7, 1898.
Agnes M. Claypole, Assistant in Microscopy, Histology, and Embryology, June 7, 1898.
C. M. Mix, Assistant in Microscopy, Histology, and Embryology, June 7, 1898.

W. M. Polk, Director of the Medical College and Professor of Gynæcology and Obstetrics, April 14, 1898.

Lewis A. Stimson, Professor of Surgery, April 14, 1898.

R. A. Witthaus, Professor of Chemistry, Physics, and Toxicology, April 14, 1898.

W. Gilman Thompson, Professor of Medicine, April 14, 1898.

George Woolsey, Professor of Anatomy and Clinical Surgery, April 14, 1898.

H. P. Loomis, Professor of Materia Medica, Therapeutics, and Clinical Medicine, April 14, 1898.

J. Clifton Edgar, Professor of Obstetrics, April 19, 1898.

Frederick W. Gwyer, Professor of Operative and Clinical Surgery, April 19, 1898.

Irving S. Haynes, Professor of Practical Anatomy, April 19, 1898.

Austin Flint, Professor of Physiology, June 15, 1898.

Frederick S. Dennis, Professor of Clinical Surgery, June 15, 1898.

Alexander Lambert, Professor of Clinical Medicine and Instructor in Physical Diagnosis, May 17, 1898.

Charles E. Nammack, Professor of Clinical Medicine, May 17, 1898.

Francis W. Murray, Professor of Clinical Surgery, May 17, 1898.

George T. Elliot, Professor of Dermatology, May 17, 1898.

Charles Stedman Bull, Professor of Ophthalmology, May 17, 1898.

Allan McLane Hamilton, Professor of Mental Diseases, May 17, 1898.

J. E. Winters, Professor of Diseases of Children, May 17, 1898.

Newton M. Shaffer, Professor of Orthopædic Surgery, May 17, 1898.

Gorham Bacon, Professor of Otology, May 17, 1898.

Charles L. Dana, Professor of Diseases of the Nervous System, May 24, 1898.

Charles H. Knight, Professor of Laryngology, May 24, 1898.

Fred Kammerer, Professor of Clinical Surgery, May 24, 1898.

Samuel Alexander, Professor of Genito-Urinary Diseases, June 15, 1898.

Ivin Sickles, Assistant Professor of Chemistry and Physics, May 17, 1898.

L. Coville, Lecturer and Demonstrator in Anatomy, May 17, 1898.

W. F. Stone, Instructor in Anatomy and Assistant Demonstrator of Anatomy, May 17, 1898.

George D. Hamlen, Instructor in Gynæcology and Obstetrics, May 17, 1898.

Louis W. Riggs, Instructor in Chemistry, Physics, and Hygiene, May 17, 1898.

Percival R. Bolton, Instructor in Surgery, May 17, 1898.

Warren Coleman, Instructor in Clinical Medicine and Materia Medica and Therapeutics, May 17, 1898.

Lewis A. Connor, Instructor in Medicine, May 17, 1898.

John Rogers, Instructor in Surgery and Assistant Demonstrator of Anatomy, May 17, 1898.

Benjamin T. Tilton, Instructor in Surgery, May 17, 1898.

Edmund P. Shelby, Instructor in Materia Medica Laboratory, May 17, 1898.
Dever S. Bayard, Instructor in Medicine, May 17, 1898.
Edward L. Keyes, Assistant Demonstrator of Anatomy, May 17, 1898.
C. C. Barrows, Clinical Instructor in Gynæcology, May 17, 1898.
W. T. Gibb, Clinical Instructor in Gynæcology, May 17, 1898.
B. H. Buxton, Instructor in Bacteriology, May 17, 1898.
C. N. B. Camac, Instructor in Clinical Microscopy, May 17, 1898.
G. G. Ward, Jr., Instructor in Obstetrics, June 7, 1898.
F. S. Fielder, Assistant Demonstrator of Anatomy, June 7, 1898.
G. K. Swinburne, Instructor in Genito-Urinary Diseases, June 15, 1898.
J. E. Newcomb, Instructor in Laryngology, June 15, 1898.
J. A. Hartwell, Instructor in Physiology, June 18, 1898.
Russell Bellamy, Clinical Assistant in Medicine, June 7, 1898.
W. Bedford Brown, Clinical Assistant in Dermatology, June 7, 1898.
E. Connor, Clinical Assistant in Otology, June 7, 1898.
W. S. Cooke, Clinical Assistant of Diseases of Children, June 7, 1898.
C. W. Cutler, Clinical Assistant in Ophthalmology, June 7, 1898.
P. H. Fitzhugh, Clinical Assistant in Orthopædics, June 7, 1898.
A. E. Isaacs, Clinical Assistant in Surgery, June 7, 1898.
C. C. Jones, Clinical Assistant in Otology, June 7, 1898.
T. G. Lusk, Clinical Assistant in Dermatology, June 7, 1898.
R. G. Reese, Clinical Assistant in Ophthalmology, June 7, 1898.
G. D. Smith, Clinical Assistant in Mental Diseases, June 7, 1898.
W. F. Stone, Clinical Assistant in Surgery, June 7, 1898.
H. H. Whitehouse, Clinical Assistant in Dermatology, June 7, 1898.
M. J. Echeverria, Clinical Assistant in Genito-Urinary Diseases, June 15, 1898.
Fallen Cabot, Clinical Assistant in Genito-Urinary Diseases, June 15, 1898.
J. A. Kenefic, Clinical Assistant in Laryngology, June 15, 1898.

B. E. Fernow, Director and Professor of Forestry in the New York State College of Forestry, April 14, 1898.
F. Roth, Assistant Professor of Forestry and Forest Manager and Instructor of Forestry in the New York State College of Forestry, May 9, 1898.

Margaret Rathbun, Matron in the Cornell Infirmary, May 9, 1898.
Josephine Dickson, Nurse in the Cornell Infirmary, May 9, 1898.
Rose McAllister, Assistant to the Registrar, *vice* A. F. Weber, term expired, May 17, 1898.
F. H. Hausner, Assistant in Library of the College of Law, *vice* H. M. Merrihew, term expired, June 7, 1898.
F. D. Moorehouse, Assistant in Library of the College of Law, *vice* J. F. Hubbell, term expired, June 7, 1898.
H. J. Gerling, Assistant in the Reference Department of the University Library, *vice* G. F. Danforth, resigned, August 10, 1898.

APPENDIX II

REPORT OF THE DEAN OF THE UNIVERSITY FACULTY

To the President of the University:

SIR :—I have the honor herewith to submit my second annual report as Dean of the University Faculty.

The duties of the Dean are defined by the revised statutes as follows:

"It is the function of the Dean to preside at the meetings of his Faculty in the absence of the President; to receive and act upon such applications of students as may be referred to him by his Faculty; to prepare and conduct the business of the several committees of which he may be made by his Faculty the chairman; and, in general, except as otherwise provided, to act as the executive officer of his Faculty."

At the re-organization of the faculties, in 1896, the Dean was continued as *ex officio* chairman of the Committees on Admission by Certificate, on Graduate Work and Advanced Degrees, and as a member of the Committee on the Register and Announcement of Courses. He was empowered in addition to supervise, as heretofore, the printing of extracts from the Faculty Records.

I. ADMISSION BY CERTIFICATE

During the current year sixty-two schools have been informed, without comment, that the work of certain students admitted by certificate from those schools had not been uniformly satisfactory.

Six schools were notified that the work of their graduates was so unsatisfactory as to raise an inquiry as to the adequacy of the preparation.

The question regarding the introduction of some further limitations in the acceptance of certificates, which was discussed by the committee during the year 1896–97 (see President's Report for 1896–97, App. II, pp. vii–ix), was resumed during the current year. The following recommendation was finally made by the committee to the University Faculty, which adopted the same:

"*Resolved*, That if a student fail in any subject in the University that depends upon an entrance subject for which a certificate or Regents' diploma has been accepted, the credit for that entrance subject may be cancelled at the discretion of the department concerned."

This action permits the departments concerned to test the preparation in those subjects offered at entrance which are continued after admission; and in this manner a certain control may still be preserved, although the introduction of the complete elective system in the Academic Department may permit of the evasion of this test in cases where the subjects offered for admission are no longer continued. This evasion, to be sure, has occurred in the past, but perhaps to a less degree than may hereafter be the case.

Meanwhile, however, an analysis of the subjects elected during the current year by the freshman class in Arts and Sciences, which had for the first time the opportunity of entirely free choice of studies, would seem to indicate that in the majority of cases the advanced subjects offered at entrance will be continued after admission. [A detailed discussion of this subject will be found in the current report of the Dean of the Academic Department, Appendix III, p. xxvi.] It is therefore possible that the above resolution may be sufficiently efficacious to prevent any serious loss of control of the entrance certificates. The whole question, however, must be left for the present in an unsettled condition, on account of the uncertain nature of the operation of the elective system. This system is on trial, and will continue so for a term of years, during which its influence upon the system of admission by certificate must necessarily be studied with great solicitude.

Meanwhile, the general resolution to which reference is made in the report of last year, namely, that all certificates in advanced requirements should no longer be considered, is still pending before the committee in a somewhat modified form, and will undoubtedly be again discussed during the coming year.

II. THE GRADUATE DEPARTMENT

The methods of procedure already established and developed by the Committee on Graduate Work and Advanced Degrees (see President's Report for 1892–93, pp. 69–71) have been generally observed during the present year. On the recommendation of the committee, the University Faculty made last year some important changes in the regulations for advanced degrees. (See President's Report for 1896–97, App. II, pp. ix–xi.)

With reference to the recommendation that a typewritten thesis should be deposited in the University Library by a candidate for the Doctor's degree before the recommendation for the degree be made, unless the fifty printed copies of the thesis required under the statute were previously there deposited, some doubt arose whether this typewritten thesis should be considered the permanent property of the University, as is the case with theses presented for the baccalaureate degree and for the Master's degree; or whether said typewritten copy should merely be considered as a pledge, to be withdrawn after the final deposit of the printed copies. The matter was presented to the University Faculty, and on recommendation of the Committee on Graduate Work it was decided that such a typewritten copy should be considered the permanent property of the University. The assumption was that the degree had been voted upon the basis of this copy, although the diploma itself is not formally bestowed until the final step is taken by the deposit of the printed theses.

In special cases applications for the acceptance of work done in residence here, but not during consecutive terms, have been granted by vote of the University Faculty. These cases are of two kinds: first, candidates holding positions elsewhere, generally in western colleges, where it was possible to secure a long winter vacation so that three or four such periods spent here during term time were reckoned as the equivalent of one year of consecutive residence; and secondly, candidates similarly situated, having their subjects in departments in which the summer vacation formed a favorable time for study, as in entomology and botany. In such cases several summers of residence have been accepted in lieu of a consecutive year, when the professors in charge of the departments happened to be in residence and were willing to assume the direction of the work done. Such candidates have always been desirable accessions to the Graduate Department and have justified these privileges. The Faculty as a body, however, has shown no inclination to surrender its private leisure or the opportunity for undisturbed work during vacation time, in order to further the formal establishment of a summer term.

One of the important agencies at the University in promoting the *esprit de corps* of the Graduate Department is the Graduate Students' Club. This club is essentially a social organization of the graduate students of the University. Its membership is restricted to those who are registered for advanced degrees, and at present consists of about sixty. Meetings are held monthly. The aim of the society is to afford to those who are pursuing graduate study in the different departments of the University an opportunity to become acquainted with each other. Members of the University Faculty are frequently invited to the meetings, and address the club on subjects of general interest to graduate students, and occasionally public lectures are given under its auspices. It may also be stated that the club is a member of the "Federation of the Graduate Clubs of America." As its name implies, the Federation is a general organization representing the various graduate students' clubs which have been organized in the more important universities of the country. Meetings of the Federation are held annually and are devoted to discussions on topics connected with the methods and character of graduate study in the universities of America. For the past few years the Federation has also been publishing a "Handbook of Graduate Courses."

At the annual meeting of the Federation of Graduate Clubs held in December last, some interesting subjects were discussed. The discussions are valuable as evidence of the graduate's point of view on certain questions which are vexing the faculties too. Among these questions was the amount of time to be required for securing the Doctor's degree. The common practice seemed to indicate three years as a minimum, although in exceptional cases a few institutions would grant the degree in two years. The consensus of opinion among the delegates was to the effect that three years should be the minimum requirement. As to examinations, in some institutions both written and oral examinations are required, while in others neither. The majority of institutions were apparently satisfied by one year's actual residence as a minimum period. As to the recommendation regarding the printing of theses, the general opinion of the delegates seemed to be that any thesis accepted for a higher degree should have sufficient merit to be worthy of publication; and if worthy of publication, that the college or university conferring the degree should supply the necessary means of publication.

Opinions were divided regarding the advisability of requiring the holders of fellowships to do a certain amount of instructional work. A resolution was passed favoring the establishment of fellowships for research work for those who have already taken the Ph.D. degree, and favoring also the granting of fellowships purely on a basis of meritorious scholarship, without regard to the financial condition of applicants. The general opinion of the convention seemed to favor the abolishment of the requirement of minor subjects, in order that there might be more specialization and that a thorough knowledge might be obtained of the single field in which the student might be working. The general view expressed was that if minor subjects were required, they should be very closely related to the major subject, with a view to increasing the professional knowledge rather than of giving breadth.

The Graduate Handbook was discussed, and it was decided to continue its publication, although its usefulness was by no means established. A committee was appointed to report at the next annual meeting regarding the continuance of said publication.

Reports upon the objects of the various graduate clubs at different institutions indicated that a great variety of purposes appeared. The majority of eastern clubs were primarily social in nature; while in the western colleges and universities literary purposes predominated.

The various changes which have been made during the past few years in the requirements exacted of candidates for advanced degrees at Cornell have given rise to some natural but partly erroneous inferences regarding the scope and effect of such changes. It has been assumed, because no general linguistic requirements are indicated in advance, that such requirements are not exacted; and that the basis for the Doctor's degree has been narrowed because graduates of technical or professional schools have been admitted to candidacy for that degree.

The Doctor's degree, to be sure, is intended to represent at Cornell long study and high attainment in a special field; and there may be some danger that specialization for an advanced degree, when initiated at too early a date, may cause neglect of a general liberal basis in the preliminary course; but this danger is not invited by the spirit in which our regulations are administered. Not many years ago the preliminary requirement for the degree of Ph.D. here was the equivalent of the A.B. degree, including a knowledge of both Greek and Latin. Later the requirement of Greek was omitted, but the requirement of Latin, that is to say, the requirement of a liberal education in the traditional sense of the word, was still maintained. Within a short time the general requirement of Latin has been omitted, although that subject remains a special requirement, as well as Greek, in a number of departments. For instance, a person holding a baccalaureate degree which did not presuppose Latin, might be admitted to the Graduate Department; but the special committee in his case would decide whether his previous training were adequate for admitting him to special work. One taking the advanced degree in natural history, for instance, would commonly be expected to have a knowledge of Latin. One taking an advanced degree in French or German would commonly be expected to have at least a thorough knowledge of Latin, if not of Greek. The general requirement, therefore, presupposes merely the equivalency of the first degree, while the special committee is responsible in each case for the enforcement of the specific requirements.

This modification in the general requirement does not mean, therefore, that the University has surrendered its attitude that the Doctor's degree should presuppose not merely special attainment in a limited field, but also a somewhat broad general foundation. It is still true, that is to say, that advanced degrees at Cornell are intended to indicate specialization based upon a previous general liberal training. The reasons for the modification in the text of the general requirement arise from the modification in the requirements for the first degree, which has rendered it impossible to continue the strict distinction between the so-called humanities and the sciences.

So also as regards the treatment of technical degrees. In exceedingly few cases do candidates appear for the Doctor's degree whose previous training has been gained in the technical courses alone; and in almost all such cases the technical training has been supplemented by additional liberal studies pursued here or elsewhere. Probably in not more than one case has the degree of Ph.D. been conferred here for work done under the direction of a technical college; and in that case the candidate held already the degree of A.B. for a full classical course at another institution, of A.M. from the same institution, and of C.E. from this University. There may be some probability of a drift into a policy of greater elasticity regarding the administration of the Doctor's degree. At present, however, the basis for this degree is a general culture course, rather than a professional course in addition to a professional Master's degree.

As regards the line drawn between graduate and undergraduate work, it may be said that many of the courses which are open to undergraduates having the requisite attainments are really in the nature of advanced or graduate courses. This happens because it is possible for many of our undergraduates to begin specialization early in their course, so that by the time they reach the junior, and particularly the senior year, they are often far better equipped for advanced and graduate work than many graduates of other institutions who enter the Graduate Department here. In general it may be said that our graduates are treated upon a somewhat different basis from undergraduates. A graduate may or may not be taking certain announced courses in the University. If he is taking such courses, they often are merely the nucleus for his own independent work, and he may be so occupied with his own investigations under the direction of the special committee which has his case in charge, that he would be taking no special announced courses at all. So also as regards the intermediate examinations. The usage regarding the necessity for taking such examinations in the case of graduate students varies with the individual and with the department. In some cases it does not seem necessary to subject our graduate students to any of these intermediate tests. In others, it seems for the interest of the graduate himself that his work be tested from time to time by examination. Our graduate students, however, need not be marked upon the usual numerical scale for undergraduates, when they enter such examinations. They may be marked simply as having passed or not passed. The chief examination of the candidate for an advanced degree comes at the end of his course, when he is ready for the degree, and is always required, no matter how many intermediate examinations he may have taken. That is to say, the advanced degree is not conferred merely after a certain number of courses have been passed.

Nor, as is occasionally elsewhere the case, is a graduate student registered in the Graduate School if he be a candidate primarily for the baccalaureate degree. Such registration does not seem to be a correct treatment of the case. The graduate who is a candidate for a baccalaureate degree is registered in the class to which he belongs, although the degree already taken is recognized by his additional enrollment in a special group.

If the deficiencies of the graduate student be so great in his special subjects that he is not fully equipped to begin graduate work, he is allowed, to be sure, to enter the Graduate Department, but must make up his deficiencies as extra work. Such students are frequently admitted as "graduate students not candidates for a degree," for a period of a year or more, during which time they acquire the necessary preparation to do advanced work in the special subjects in which they are later to become candidates. They may take undergraduate courses and be marked upon such work, and the record of the work is preserved. But as such students are not candidates for a degree, the work which they are doing, although credited to them, does not count toward the time necessary for securing the advanced degree.

Among the needs of the Graduate Department are of course additional scholarships and fellowships, not merely to compete effectively with other more favored institutions, but in order to provide for an actual and absolute demand. These rewards have been regarded always at Cornell not merely as a means of assistance to students in want of financial aid, but as an incentive to scholarly activity, and accordingly no limitations have been imposed, based upon the financial circumstances of the holders. The growing demand for travelling fellowships is shown in the increasing frequency of recommendation to convert resident fellowships temporarily into this class. The benefit of a term of residence and study abroad for many subjects is undeniable, and generally outweighs the disadvantage of a slight diminution in the ranks of the resident graduates. The value of our own advanced degrees, when based in part upon such a period of foreign study, is materially enhanced. It might be well therefore to establish a number of fellowships like the President White Fellowships in History and Political Science, to be made travelling fellowships at discretion. The recommendation of the Faculty that honorary fellowships be established without fees or emoluments has been noted in the résumé of Faculty Legislation.

The candidates for advanced degrees during 1892–98 were distributed as follows:

I. By degrees:

	1892–93	93–94	94–95	95–96	96–97	97–98
A.M.	9	15	3	3	14	19
Ph.M.	2	6	3	6	—	—
M.L.	8	12	7	4	—	—
M.S.	33	23	13	15	11	11
M.C.E.	7	18	13	5	3	4
M.M.E.	31	48	36	18	10	11
Ph.D.	58	77	67	58	79	89
D.Sc.	19	31	31	22	16	11
Total	167	230	173	131	133	145

The change in distribution in 1896–97 is explained by the modification in the form of advanced degrees already described. A few candidates for the degree of D.Sc. have preferred not to exercise the option afforded of changing to Ph.D.

II. By subject (each minor counted separately):

SUBJECT	MAJOR						MINOR					
	'92–3	'93–4	'94–5	'95–6	'96–7	'97–8	'92–3	'93–4	'94–5	'95–6	'96–7	'97–8
Semitic Lang.	–	–	–	–	–	–	–	–	–	–	1	1
Class. Archæol. and Hist. of Art	1	1	–	1	1	–	1	3	4	1	2	2
Comparative Philol.	3	2	3	–	1	–	8	15	11	7	6	7
Greek	3	6	4	1	3	5	3	3	4	7	5	5
Latin	1	3	3	4	3	4	3	9	5	3	3	3
Germanic Lang.	3	3	4	4	4	1	1	3	3	5	5	7
Romance Lang.	1	4	2	3	6	5	2	2	3	6	9	8
English	9	22	12	11	12	11	11	24	10	12	17	5
Philosophy	18	23	20	20	14	15	32	38	35	37	30	35

SUBJECT	MAJOR						MINOR					
	'92-3	'93-4	'94-5	95-6	'96-7	'97-8	'92-3	'93-4	'94-5	'95-6	'96-7	'97-8
Hist. and Pol. Sci.	19	22	20	16	15	24	37	54	45	28	31	47
Math. and Astron.	9	13	5	4	4	3	20	31	27	16	21	18
Physics	16	20	15	9	12	12	16	35	31	20	14	18
Chemistry	15	22	16	11	14	18	24	21	13	11	14	18
Botany and Arbor.	5	2	6	6	7	7	13	11	12	14	15	19
Entomol. and Gen. Inv. Zool.	6	5	2	1	2	1	5	6	8	3	4	3
Phys. & Vert. Zool.	7	7	4	1	2	1	9	10	7	3	3	1
Anatomy	-	-	-	-	-	1	-	-	-	-	1	-
Micros. and Embry.	-	-	-	-	-	1	-	-	-	-	3	2
Geol., Paleont. and Mineralogy	2	2	2	2	4	4	2	6	5	8	11	13
Agriculture	8	3	1	8	11	13	5	1	-	3	10	13
Veterinary Med.	-	-	-	-	-	1	-	-	-	-	-	3
Architecture	1	1	1	1	1	1	2	-	-	-	1	1
Civil Engineering	7	20	16	8	4	5	8	20	18	10	5	5
Mech. Engineering	33	49	38	20	13	12	34	44	31	19	16	11

During the past eleven years 862 graduates of one hundred and fifty-two institutions have been admitted to graduate work, distributed as indicated in the following table:

Acadia	5
Adelbert	1
Alabama, Agr. and Mech. Coll.	1
Albion	1
Alfred	2
Allegheny	2
Amherst	4
Anatolia	1
Arkansas	2
Bates	2
Beloit	2
Boston	4
Bowdoin	1
Brooklyn Poly.	1
Brown	9
Buchtel	6
Bucknell	2
California	3
Campbell	1
Capitol	1
Carleton	2
Chaddock	1
Cincinnati	1
Colgate	1
Colorado Univ. of	2
Colorado, School of Mines	1
Columbia,	2
Columbia School of Mines	1
Columbia School of Law	1
Cornell College	2
Cornell University	364
Dalhousie	18
Dartmouth	2
Davidson	2
Dennison	1
Denver	1
DePauw	11
Earlham	5
Elmira	2
Erlangen	1
Franklin	3
Franklin and Marshall	1
Furman Univ.	1
Gallaudet	1
Ghent, State Univ. of	1
Hannover, Tech. Hochschule	1
Hamilton	5
Harvard	8
Harvard Annex	1
Harvard (Lawrence Scientific)	1
Haverford	2
Hillsdale	2
Illinois	6
Illinois Wesleyan	1
Indiana	21
Iowa Agr.	7

Iowa Coll.	4
Iowa State	3
Japan Imperial Univ.	1
Johns Hopkins	3
Kansas Agr.	2
Kansas State Univ.	8
Knox	6
Lafayette	2
Lake Forest	1
Lawrence	1
Lehigh	6
Lombard	1
London	2
Luther	3
McGill	4
McKendree	1
Maine Agr.	5
Manitoba	7
Mason Coll. (Birmingham)	1
Massachusetts Agr.	5
Massachusetts Inst. of Tech.	4
Michigan Agr.	6
Michigan Univ.	15
Milton	1
Minnesota	10
Missouri State	2
Mt. Allison	1
Mt. Holyoke	1
Mt. Union	1
Napa	1
Nashville	1
Nebraska	5
Newberry	1
Newcomb	1
New Hampshire Agr.	1
New York, Coll. of the City of	5
North Carolina	2
Northwestern Univ.	3
Notre Dame	1
Oberlin	6
Ohio State	6
Ohio Univ.	2
Ottawa	1
Otterbein	1
Oxford	1
Pacific Univ.	1
Pennsylvania State	1
Pennsylvania Univ.	1
Pennsylvania Western Univ.	1
Pine Hill Theo. Sem	1
Presbyterian College of S. C.	1
Princeton	4
Purdue	9
Queen's Univ. (Kingston, Can.)	2
Randolph-Macon	1
Rensselaer Poly.	1
Rochester	5
Rose	3
Rutgers	2
St. Andrews (Scotland)	1
St. Petersburg (Russia)	1
Smith	19
South Carolina	3
South Dakota Agr.	3
Southern California	2
St. Olaf	1
Stanford	7
Stevens Inst.	4
Strassburg (Germany)	1
Swarthmore	2
Sidney Univ. (New So. Wales)	2
Syracuse	10
Texas	4
Texas Agr.	2
Tokio Univ.	1
Toronto	10
Trinity Coll. (Toronto)	1
Tulane	1
Union	1
U. S. Naval Academy	3
Vanderbilt	1
Vassar	15
Vermont	1
Victoria	1
Virginia	4
Virginia Agr. and Mech. Coll.	2
Wabash	1
Washington University	2
Wellesley	7
Wells	1
Wesleyan	4
Westminister	2
Wheaton	2
Williams	3
Wilson	1
Wisconsin	3
Wittenberg	1
Wooster	2
Worcester Poly.	3
Yale	11
Yale Theological Sem.	1
Yale (Sheffield)	3

During the current year the question of the method of dealing with the graduates of Canadian colleges and universities was reviewed and discussed by the Graduate Committee, but it was decided to recommend at present no change in this policy. The courses in Canadian colleges and universities are not always the full equivalent of the four-year curriculum at Cornell; but owing to the different educational standards and methods of teaching in Canada, it was felt that no direct comparison need be instituted. Experience has shown that the encouragement of Canadian students has produced satisfactory results. The quality of such students has been excellent, and in cases where the previous preparation has not been entirely equal to that of our own graduates, a longer period of residence at Cornell has tended to make good these deficiencies.

Graduate students who are not candidates for a degree, as well as those who are, have been required to work under the direction of a special committee of the Faculty. The numbers of such students during the years 1889–98 are as follows:

1889–90	'90–91	'91–92	'92–93	'93–94	'94–95	'95–96	'96–97	'97–98
6	2	2	4	1	11	14	18	14

The variation in the above figures, as previously explained, is caused by the change in the regulations governing tuition fees. (See President's Report for 1896–97, App. II, p. xiv.)

Advanced degrees conferred 1888–98:

	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98	Total
A.M.	3	1	8	6	6	4	8	2	1	10	10	59
Ph.M.	--	--	1	--	2	--	3	1	3	--	--	10
M.L.	--	--	--	--	1	3	2	3	--	--	--	9
M.S.	3	6	7	7	7	6	10	7	12	6	6	77
M.C.E.	1	--	1	2	--	2	8	4	--	1	3	22
M.M.E.	2	1	6	3	6	14	16	8	15	6	2	79
Ph.D.	3	1	2	3	8	4	16	13	14	11	23	98
D.Sc.	--	--	--	--	--	2	3	6	3	3	--	17
Total	12	9	25	21	30	35	66	44	48	37	44	371

It was voted by the Faculty in the fall of 1896 that in place of the degrees of Master of Arts, Master of Philosophy, Master of Letters, and Master of Science, the one degree of Master of Arts be conferred; and in place of the degrees of Doctor of Philosophy and Doctor of Science, the one degree of Doctor of Philosophy be conferred; but that this resolution was not to affect existing applications, where the applicant might prefer the existing degree, for which he might be eligible. Otherwise, the resolution was to go into effect at once.

In 1897 three candidates for the degree of D.Sc. availed themselves of this privilege of receiving said degree, but in 1898 all such applicants changed to the degree of Ph.D.

III. FACULTY LEGISLATION

The right of revision conferred by statute upon the University Faculty (see President's Report for 1896–97, App. II, p. vi), was exercised during the year with reference to the form of degree to be conferred upon graduates of the new College of Forestry, as follows:

"WHEREAS it is proposed in the announcement of the College of Forestry, submitted to the Committee on the Register and Announcement of Courses, that the four-year course in said college shall lead to the degree of Bachelor of the Science of Forestry, and whereas the form of degree to be conferred at this University is an educational matter of University policy, therefore

"*Resolved*, That the University Faculty, in the exercise of powers conferred upon it by the statute passed the twenty-sixth of May, 1896, approve and it does hereby approve the degree of Bachelor of the Science of Forestry (B.S.F.)."

Similar action was taken regarding the degree of M.D., to be conferred upon graduates of the new Medical School.

Certain correspondence between a member of the Faculty of Arts and Sciences and the Professor in Charge of the College of Architecture was by joint request received by the University Faculty and placed on file. This action was to secure an appropriate deposit for information regarding questions involving members of more than one Faculty.

Important action was taken regarding the extension of Library privileges, whereby it was recommended that graduate students who were candidates for advanced degrees should have the privilege of drawing books from the University Library on the same terms on which it is now enjoyed by Fellows and Graduate Scholars. This recommendation was afterwards approved by the Library Council and by the Trustees.

A further recommendation, which was also approved as above, provided for the extension of the Library hours to eleven o'clock at night.

These recommendations were the outcome of an extended debate upon the question whether the University Library should be considered primarily as a library of reference or whether its function should be further extended as a library of circulation. Those in favor of a still more liberal extension of the privilege of drawing books from the Library, while supporting the previous recommendations, announced the intention of raising at a later date the question of extension, to all students, of similar privileges.

On the other hand, a resolution affecting a further limitation in circulation, by which members of the instructing body, save as to works in their own fields of instruction, should be subject to the same restrictions of time and of number of volumes as in the case of Fellows and Graduate Scholars, was after discussion laid upon the table.

The action of the Faculty regarding the deposit of theses in the Library has already been noted (p. vii).

A proposition to divide the academic year into two terms with two set periods of examination, instead of the present arrangement of three terms, was referred to a committee, which discovered so many interests involved rendering such a change inexpedient, that for the present it seemed inadvisable to make any recommendation of such a change in the calendar.

The question of the adoption of academic costume during Commencement week by members of the Faculty was debated in the University Faculty at length and was referred to a committee for further discussion and report. The report of the committee, referring the question back to the Faculty without any formal recommendation, was adopted, and without further action the report was ordered to be placed on file. While a certain number appeared to favor the wearing of the traditional academic costume, it was felt that its adoption should be preceded by a more nearly unanimous desire than at present appears to be the case.

Heretofore, applications for fellowships and graduate scholarships were to be filed on or before the 15th of May. This limit was changed to the 15th of April, in order that candidates for such positions might be informed of any action taken, in season to complete or modify their subsequent plans for study.

The question of the treatment of applicants for undergraduate scholarships has caused no little difficulty in the past. These scholarships are designed for bona-fide members of the freshman class who have not heretofore been registered as students either in this University or in any other university or college. In the case of some applicants, it was found that they were really competent for admission to the sophomore class, or at all events were nearer, in point of preparation, to that class than to the freshman class. In order that the competition might be suitably limited, a resolution was incorporated into the scholarship statute that no one should be eligible for such scholarships who should have received on admission credit for more than twenty hours in advance of the course. Under this statute, however, it was found that some applicants who otherwise would have received credit in excess of this limit, did not present certificates for the full amount of credit which they might have secured, or probably did not present themselves for examination in all the subjects in which they were fitted. In this dilemma the committee reported a modification of the statute to the effect that no one should be permitted to compete for such scholarships who could claim credit for more than twenty hours of work in advance of the course entered. This application for credit to the full amount for which credit could be claimed was to be made as heretofore at the time of the admission of the applicant, and not to be postponed to any later date in the course. After careful discussion the University Faculty was unable to accept this recommendation; and pending a more satisfactory solution of the difficulty, the recommendation was laid upon the table.

The resolution affecting the cancelling in certain cases of credit obtained by certificate for certain entrance subjects has been discussed in the earlier part of this report (p. vi).

At the last meeting of the year the University Faculty recommended that the Board of Trustees establish the position of Honorary Fellows; these fellowships to be open only to persons already holding the Doctor's degree; holders of such fellowships to receive no emoluments and not to be charged tuition; and such fellowships to be conferred only upon persons actually in attendance upon the University.

The object of this recommendation is to encourage the use of the fine equipment of the University by mature students who, having passed through the period of preparatory study for an advanced degree, desire to pursue independent investigations in their chosen specialty.

Respectfully submitted,

HORATIO S. WHITE,

Dean of the University Faculty.

APPENDIX III

REPORT OF THE DEAN OF THE FACULTY OF ARTS AND SCIENCES

To the President of the University:

SIR:—I have the honor herewith to submit my second annual report as Dean of the Faculty of Arts and Sciences.

I. ADVANCED STANDING

In accordance with the resolution passed at the first meeting of the Faculty of Arts and Sciences, June 19, 1896, the existing Committee of the General Faculty on Advanced Standing administered the cases arising during the vacation and at the beginning of the following term. At an early meeting of the University Faculty (September 25, 1896), the question of the appointment of a University Committee on Advanced Standing was discussed, and it was finally moved and carried at a subsequent meeting (October 2, 1896), that cases of admission to advanced standing be referred to the Special Faculties concerned. In accordance with this action the cases of advanced standing in the Faculty of Arts and

Sciences for 1897–98 have been settled by a committee consisting of the Dean and the heads of the departments concerned. Twenty-five students have been admitted to advanced standing in the Academic Department during the last year. For credit for work done in professional schools, see VII, Faculty Legislation.

At the close of the academic year the question arose as to the treatment of students who having failed to pass the examinations for entrance to the Academic Department last fall, entered some other college of the University and who may apply next fall for admission to the Academic Department. The matter was laid before the Faculty of Arts and Sciences by the Dean as Chairman of the Committee on Advanced Standing, and while no motion on the point was made, it was the opinion of all those members present who spoke upon it that such students should be treated precisely as are those students who come from other colleges and universities, outside of Cornell, and apply for advanced standing.

In accordance with this principle students who fail to enter the Academic Department but enter some other College of the University and satisfactorily complete a year of work may be transferred to the Academic Department as advanced students, and required to make up the specific entrance requirements in which they are still deficient within one year.

It is certainly unfortunate that the inequalities in the entrance requirements of the various Colleges should permit one College to be used as a preparatory school for another. With the advance in the entrance requirements which go into effect in September, 1900, there will practically be possible a difference of only one modern language, and the above difficulty will be largely reduced.

II. ON DOUBTFUL CASES

The Faculty, acting through the Committee on Doubtful Cases, temporarily removed from the University at the end of the fall term twelve students for deficiency in scholarship, and warned or referred twelve others. Of the twelve removed, nine were members of the freshman class. Three were readmitted at the beginning of the following term, of whom two were freshmen. At the end of the winter term four were temporarily removed, of whom three were freshmen, and three were warned or referred; at the end of the spring term two were removed, of whom none were freshmen, and two others were warned or referred.

As compared with last year's record there is a very gratifying diminution in numbers, twenty-four, seven, and four this year as against twenty-nine, twenty-nine, and thirteen of last year. A part of this reduction may fairly be attributed to the new elective system, but a part is undoubtedly due to the committee, which has gradually adopted a more consistent and uniform treatment of the cases coming before it, and has not reversed its decisions in cases of students temporarily removed, except upon the ground of new evidence. The number readmitted at the beginning of the winter term was but three, and none were restored at the beginning of the spring term. The period of removal for freshmen is until the beginning of the following year and as the cause of failure is ordinarily deficient preparation the committee usually attaches some condition to reinstatement, such as the removal of entrance deficiencies, etc. The importance of the work of this committee cannot be overestimated, as it is the only public and general medium for the enforcement of the Faculty rules relating to standards of scholarship.

III. RECORDS OF CANDIDATES FOR GRADUATION

The Committee on Records of Candidates for Graduation reported favorably on the following numbers of candidates, who were afterwards recommended by the Faculty of Arts and Sciences and received degrees at Commencement.

Arts	42
Philosophy	44
Science	57
Letters	3

IV. ON EXTRA HOURS AND CHANGES IN REGISTRATION

The jurisdiction of this committee includes cases of substitution for required work and the decision in cases of petitions for permission to graduate in less than four years.

The number of petitions acted upon during the year was 902. It is difficult to give an exact numerical classification of the categories of these petitions. They include petitions to discontinue work already registered for; to change work already registered for; to substitute other studies for required work; to take extra hours, etc.

The committee has granted the first class freely, believing that students should be encouraged to confine themselves to a smaller range of studies, to which they can give more time. The question of extra hours has always been a difficult one, as upon it turns the length of the college course. The Faculty rule (Section 12) declares that "a petition to take more than the maximum number of hours will not be entertained, unless the petitioner has received permission to graduate in less than four years." The effect of the rule naturally was to lead all students who desired extra hours to petition for permission to graduate in less than four years. As it is possible under the present system for students who enter slightly in advance of their course, eighteen hours, for instance, or the equivalent of two courses, as French and German, or French or German and mathematics, to graduate in three years by taking the maximum number of hours, it did not seem wise to reduce further the time of residence, or to extend this right to those who did not enter with a certain maturity as evinced by their advanced preparation.

The entire question was laid before the Faculty of Arts and Sciences, and while no definite action was taken on the subject the views expressed during the discussion were embodied by the committee in the following rules under which it has worked during the year :

"I. Application for graduation in less than the full number of years will not be entertained if it involves taking more than the maximum number of hours per term.

II. Application for more than the maximum number of hours will not be entertained except in cases involving the making up of conditions of not more than one year's standing or the reviewing of work taken at another institution for which full credit was not given at entrance.

III. Drill and gymnasium, or if excused therefrom, the substitute offered in that term, will not be counted in determining the hours an applicant is taking.

IV. Applications for substitution for required work of the course will not be entertained unless endorsed by all the professors concerned, and unless hour for hour be offered."

In explanation of the above it may be said that under the Faculty rules a student who does not remove a condition within a year of the time it is incurred *must* take the work over again in class, and it naturally counts as new work. If he takes it sooner than he is obliged to and while the subject is fresh in his mind it seems only fair not to count it as new work ; and the same may be said of the reviewing of work taken at another institution for which full credit was not given at entrance. Drill and gymnasium are not included in the number of hours necessary for graduation and it seems only reasonable that the substitute, in cases of excuse, should also not count.

Extra hours have, however, as last year, been granted in a particular term when the average of the year has not exceeded the maximum, and a small number of additional hours has sometimes been allowed when necessary for graduation.

In my report for 1896–97, I called attention to the fact that from this year on all work in the Academic Department would be elective (with the exception of military drill, gymnasium, and thesis) and that it would seem that students who have deliberately selected their own studies should be required to pursue them unless some extraordinary reason for their discontinuance arose. The present rule on the subject (Section 4) is "A subject once elected must be carried through to completion, otherwise credits already received may be cancelled." I stated also that, as a matter of fact, the penalty imposed for violation of the rule is scarcely ever exacted, and an instructor is usually disinclined to require the presence of a student who is an unwilling attendant of the class. If an explicit statement of the reason for the desired change were required before the approval of the instructor were given, and if it were understood that withdrawal without sufficient excuse would be followed by a cancellation of the credits already received, the evil would be diminished.

At the end of the fall term the first opportunity to enforce the above rule under the new system arose. It was found that in the original legislation on the subject (Records D, p. 66) the exact words were: "In case a study running through more than one term be discontinued by any student, without permission or valid excuse, the Faculty may, at the request of the department affected, cancel the credit already entered for such partial work." In accordance with this procedure, the marks of three students, two in Romance languages and one in English, were cancelled by the Faculty at the request of the departments concerned. It is remarkable that so few cases have been reported, and it must be attributed, I think, rather to the disinclination of the professor to take such an extreme course than to the absence of cases worthy of such treatment. The remedy for what, under the new system, may grow to be a serious evil, is in the hands of the individual professor. If he is unwilling to recommend the cancellation of credits already given in case the excuse for discontinuing work is not a valid one, or if he is willing to accept a flimsy reason, the committee of course cannot go behind his action.

In connection with this general subject I may say that a number of interesting and important questions are arising or likely to arise in regard to the length of the college course. The official statement (Register for 1897-98, p. 68) is: "For graduation, 180 hours of instruction, besides military drill and physical training during the freshman and sophomore years, are to be completed." Elsewhere the use of the words freshman, sophomore, etc., and the statement on p. 45, "but no student will be graduated until he has passed successfully examinations which . . . . . shall amount to an aggregate of fifteen hours a week during the entire four years, exclusive of the requirement of drill and gymnasium," would seem to indicate that residence for four years is required unless a student enters in advance of his course. It is still possible, however, for a person entering without an hour of credit to complete the required work in a little over ten terms instead of twelve; and as almost every one receives credit on entrance for a few hours at least in advance of the course, the result is that a considerable number of our students complete the amount of work required for graduation in ten or eleven terms and may then apply for a leave of absence, which is generally granted. In the majority of cases the reason given is a financial one, and it is difficult to refuse the permission requested. While under our present system it seems impossible to insist upon a residence of four years, it is greatly to be regretted that any considerable number of our most advanced students should withdraw at the time when they themselves are best fitted to enjoy the advantages offered by the University.

A more serious difficulty in this connection was mentioned by the Dean of the General Faculty in his last report, 1895-96 (Appendix II, p. xii), namely, a tendency on the part of seniors to drop off from their work at the end of the year, to take a small number of hours in the spring term, and to neglect the final examinations. The rules of the

Faculty require a senior to register for at least ten hours each term, even if the 180 hours have been completed, and he is expected to pass the ten hours satisfactorily, unless excused. A clear understanding of this rule and the knowledge that a neglect of work during the senior year may endanger the prospect of graduation will probably remedy the evil, which is proving serious.

The Faculty wisely made no changes in the existing rule in anticipation of the new elective system, and it is perhaps too soon to suggest any now. There is one point, however, to which I may briefly allude. The amount of work is thus stated in the Rule (Section 6). "In the general courses the average number of hours is fifteen a week. Seniors, juniors, and sophomores may take a maximum of eighteen hours, freshmen a maximum of seventeen. The minimum number of hours required for graduation is 180, the minimum for any term in senior year is ten ; in junior year, twelve ; in sophomore or freshman year, fourteen." The difference between the maximum for a freshman and a sophomore, junior, or senior, is only one hour, an entirely inadequate distinction, if it is desired to make a distinction. If the difference were three hours there might be some reason for it ; there seems to be none for the one hour. It is an inconvenient and useless distinction and might better be abolished, and a uniform maximum of eighteen hours be fixed for all. The same may be said of the minimum, which varies from fourteen in freshman and sophomore year to twelve in junior and ten in senior year. There seems no good reason for compelling freshmen and sophomores to take so large an amount of work at a time in their course when they should rather be encouraged to take a smaller amount and do it more thoroughly. It would seem that a minimum of twelve hours would be better and that this number might be made uniform for all classes. There might possibly be some objection to raising the minimum for seniors from ten to twelve, but this would be only ten hours of university work in addition to the thesis, and it certainly does not seem excessive. The majority of seniors carry more than twelve hours, and any one deserving of exceptional treatment could petition the committee for permission to take a smaller number of hours. The above recommendation was adopted by the Faculty, see VII, Faculty Legislation.

The average number of hours fixed by the Faculty at fifteen a week is probably for our circumstances the ideal amount ; but it is impossible to make that number anything but the average. It would be best for the student to limit himself to that number if it were possible to avoid the accidents of illness, absence, etc. ; but as it is not, the prudent student will always accumulate a reasonable provision of hours in advance of his course.

V. ON LEAVES OF ABSENCE, INCLUDING LATE REGISTRATION

The Dean is authorized to grant leaves of absence from town for satisfactory reasons, except in cases of absence extending over term examinations. Excuses for absence on account of illness are now recommended by the Professor of Physical Culture, to whom doctors' certificates are to be submitted for his endorsement; and this item is accordingly omitted from the analysis of the current year. All other excuses for absence are to be presented to the heads of the departments concerned. By a vote of the General Faculty, passed December 12, 1885, the keeping of a record of absences is to be left to the discretion of the heads of departments. During the past year leaves of absence have been granted as follows:

	Fall	Winter	Spring
Personal illness	9	2	3
Illness in family	12	12	4
Weddings	9	3	3
Business summons	8	15	8
Delegates to conventions	9	17	4
Athletic teams, etc.	6	16	18
Voters	6	2	0
Miscellaneous	2	5	6
	61	72	46

For the corresponding terms last year the numbers were 90, 69, and 59.

The Dean is also authorized to grant permission to register to students who arrive after Registration Day. Of such cases, in which excuses more or less valid were presented, and in the majority of which the delay occasioned was not more than two or three days, there were during the past year the following number:

Fall	18
Winter	60
Spring	43

The principal excuses offered were illness, detention by necessary business, and failure to make connection with trains. For last year the numbers for the corresponding terms were 20, 118, and 33.

The difficulty alluded to in my last report in regard to the late registration of seniors has been sensibly reduced, only 11 seniors registering late in the spring term, and these for brief periods and from the usual causes of illness, business, etc.

VI. THE NEW ENTRANCE REQUIREMENTS AND ELECTIVE SYSTEM

With the opening of the year the new entrance requirements and elective system adopted by the General Faculty, May 15, 1896, went into effect, and their results have naturally been scanned with the deepest interest. The new system, in brief, provides for but one course in the Academic Department, leading to the degree of A.B., with freedom of election (except as regards military drill, gymnasium, and thesis). The requirements for admission, in addition to the primary entrance examinations, consist of three groups: Greek and Latin; Latin and advanced French or advanced German; and advanced French, advanced German, and advanced mathematics (solid geometry, advanced algebra, and plane and spherical trigonometry).

It may be said at once that it is the policy of the Committee in Charge of the Matter of Admission to the University to require an exact compliance with the specific requirements, and no one was admitted in September who had not complied exactly with the requirements of the first group. In regard to the second and third groups, the difficulty of obtaining the full amount of modern languages and mathematics, and the misunderstanding as to the precise amounts required for the modern languages, led the committee to accept equivalents for deficiencies in the specific requirements of these groups, or to admit with a slight deficiency, but to require in all cases that these deficiencies be made up either in or out of the University within one year; in the University when an equivalent amount was offered at entrance, out of the University when there was an actual shortage. By this policy the exact entrance requirements must in all cases be met, and it is expected that as a better knowledge of the nature and amount of the requirements prevails, they will be met at entrance.

One hundred and thirty-seven freshmen entered the new Course in Arts in September. This number includes only those who entered the University for the first time, and not those who were registered back on account of deficiencies in studies, etc., of whom there were about thirty. Of the 137 freshmen admitted to the Course in Arts, 47 offered the entrance requirements in Greek and Latin (Group A), 54 those in Latin and advanced German (Group B), 27 those in Latin and advanced French (Group B), and 9 those in advanced German, advanced French, and mathematics (Group C).

It appears from the above that out of 137 freshmen in Arts, 128 offered Latin for entrance, while only 9 offered the third group of advanced French, advanced German, and mathematics. Of those who offered Latin, 81 united with it a modern language, 47 united with it Greek. Of those who offered Latin with a modern language, 54 chose German and 27 French.

In order to make these figures clearer, it may be said that if the old nomenclature were retained the 137 freshmen would be distributed as follows: 47 in Arts, 81 in Philosophy, and 9 in Science. The numbers entering these courses in 1896 were: Arts, 59; Philosophy, 47; and Science, 56. Apparently the large increase, 34, in Philosophy is due partly to the increased difficulty in meeting the requirements of the third group, and this may explain to a certain extent the fact that 39 dropped classics after entering. In view of the disproportionate difficulty of the third group some modification would seem to be needed, and after a conference of the professors of science, a report was made to the Faculty (see Legislation) recommending the introduction into Group C of a requirement in science as an alternate for mathematics. This action was based partly upon a desire to encourage the study of science in the schools, and partly upon a desire to lessen the difficulty of meeting the exact requirements of the third group by offering not an easier, but an alternate requirement with mathematics.

Of equal interest is the question of what studies the above 137 freshmen elected. The official declaration of the Register for 1897-98 (p. 68) is as follows: "For those entering the freshman class the work of the entire course is elective, except as regards military drill, gymnasium, and the thesis, and is subject only to the limitations prescribed by each department of instruction. Students are, however, advised to lay out definite and systematic lines of study." In accordance with this statement the various professors in the Academic Department were requested to prepare a list of courses open to freshmen without special permission, and the list was printed in the Announcement of Courses of Instruction for 1897–98, and may also be found in the Register for that year, pp. 68–9. It may be said that no new principle was involved in this nor could it be considered as a restriction upon the rights of election, as many departments in the University for a long period of time had been accustomed to indicate in the Announcement of Courses of Instruction what preparation was needed for particular courses and in what order, as regards other courses, they must be taken. It should also be said that while the Dean and doubtless all professors concerned have been ready and willing to advise freshmen in regard to their choice of studies, still the large majority of the class have made their own selections in accordance with their own plans of future work.

The courses of study taken by the 137 freshmen in the Course in Arts during the year 1897–98 are as follows:

GREEK

		Students
A.	Elementary Greek	2
1.	Freshman Course	31
1a.	Supplementary Course	2
13.	New Testament Greek	1

SEMITIC LANGUAGES

8.	Oriental History	1

LATIN

1.	Freshman Course	83
9.	Roman Antiquities	1
13.	Sight Translation	14

GERMANIC LANGUAGES

1.	Freshman Course	39
2.	Sophomore Course	23
3.	German Composition	16
4.	Heine's Life and Works	14
5.	Goethe's Life and Writings	7
8.	German Historical Dramas	11
9.	The Modern Novel	2

ROMANCE LANGUAGES

1.	Freshman Course	59
2.	Sophomore Course	15
3.	Literature of the Seventeenth Century	13
6.	French Language and Literature to XVI Century	1
7.	Modern French Drama	3
10.	French Conversation	8
12.	French Comedy of XVIII Century	1
16.	Italian Grammar and Reading	2
17.	Spanish Grammar and Reading	1

ENGLISH

1.	Freshman English	93
2.	Short Paper Course	6
3.	Literary Forms	7
5.	English Prose, Eighteenth Century	2
6.	Argumentative Writing	1
10.	The History of the English Language	9
11.	Old English (Anglo-Saxon)	3
30.	English Literature	6
32.	Shakespearian Readings	11
33.	American Literature	36

HISTORY AND POLITICAL SCIENCE

1a.	Ancient Greece	1
1b.	Ancient Rome	2
4a.	Europe during the Middle Ages	34
9a.	Oriental History	2
13.	General History of England	4
14.	General History of Europe	1
20.	History of India	1
21.	History of New York	25
22.	American History	5
34.	Introduction to Political Science	5

51.	Political Economy	9
54.	Money, Credit, and Banking	1

MUSIC

1.	Elementary Course	8
2.	Chorus-singing	2

MATHEMATICS

1.	Advanced Algebra, etc.	3
2a.	Analytic Geometry	1
3.	Analytic Geometry, etc.	1
6.	Solid Geometry, etc.	36
7.	Solid Geometry, etc.	14
8.	Solid Geometry, etc.	9
9.	Supplementary Course	7
10.	Analytic Geometry and Calculus	6

PHYSICS

2a.	Short Course in Experimental Physics	5
2b.	Longer Course in Experimental Physics	5
9.	Photography	1

CHEMISTRY

1.	General Inorganic Chemistry	39
2.	Qualitative Analysis	4
3.	Quantitative Analysis	3

BOTANY

1.	General Com. Morphology and Physiology of Plants	9
2.	Special Morphology of Higher Plants	7
5.	Geographical Botany	1
11a.	Algology	1
11b.	Taxonomy of the Bryophytes and Pteridophytes	1

ENTOMOLOGY AND GENERAL INVERTEBRATE ZOOLOGY

1.	Invertebrate Zoology, general course	9
2.	Invertebrate Zoology, special course	3
3.	General Entomology	6

PHYSIOLOGY, VERTEBRATE ZOOLOGY, AND NEUROLOGY

1.	Physiology	16
2.	Vertebrate Zoology	15
3.	Neurology	14

ANATOMICAL METHODS AND HUMAN ANATOMY

1.	Anatomical Methods and Gross Anatomy	3
2.	Advanced Anatomy	3
3.	Human Anatomy and Research	2

MICROSCOPY, HISTOLOGY, AND EMBRYOLOGY

1.	The Microscope and Microscopical Methods	3
2.	Vertebrate Histology	2
3.	Vertebrate Embryology	2

GEOLOGY

4.	Palæontological Illustration	3

HYGIENE

1.	Hygiene and Physical Culture	8
2.	Hygiene and Physical Culture	7

FREEHAND DRAWING

1.	Freehand Drawing	9

It should be stated that the above figures represent the studies registered for at the beginning of the year and that there have been changes since upon petitions endorsed by the professors concerned. It is not believed that these changes are sufficient in number or character to change materially the above statement.

It is too soon perhaps to attempt to draw any inferences from this statement of elective work, but it presents many interesting points, one or two of which may be noticed here. First, in regard to the effect upon classical studies. As has been seen, there has been an increase of sixteen over last year in the number of those offering Latin and a diminution of twelve in those offering Greek. Of the total of 47 who offered Greek and Latin, 7 dropped both, 9 dropped Greek but continued Latin, and 3 dropped Latin but continued Greek. Of the 128 who offered Latin, 44 dropped it, but of these two began the study of Greek and three continued the study of Greek, so that 39 is the true number of those who dropped classics on entering. Now, as has been shown above, 56 freshmen entered in 1896 in the Course in Science as against 9 in 1897 in the corresponding course (Group C), and it may be that a considerable number of the 39 who dropped classics upon entrance would have entered the Course in Science two years ago and were compelled this year to offer Latin for entrance to what was practically the same course owing to their inability to meet the requirements of Group C.

A summary of the various classes of studies presents some remarkable features. 524 students elected courses in languages, 160 in science, 80 in history and political science, 77 in mathematics, 10 in music, 15 in hygiene and physical culture, and 9 in freehand drawing. The large preponderance of electives in language is striking, being 524 to 351 of all other studies. The total of electives in English alone is 174, or 14 greater than the total of electives in all sciences, physics, chemistry, botany, entomology, and general invertebrate zoology, physiology, anatomy, microscopy, histology, and embryology, and geology. The most popular sciences are chemistry and physiology, which are taken respectively by 46 and 45 students, yet the two together fall short by 7 of the 98 electives in Latin and only exceed by 1 the total in history and political science.

In regard to specialization, it may be said that of the 137 freshmen, 5 confine themselves exclusively to languages, but no one of the five takes less than five languages, and there is not one of the 137 confining himself entirely to science, or to a combination of science with mathematics.

It is, of course, impossible to generalize from a list of the studies of one year. In order to judge the system fairly it will be necessary to follow the 137 freshmen of this year through their subsequent course and endeavor to ascertain whether they are under the new system pursuing "definite or systematic lines of study."

VII. FACULTY LEGISLATION

At the beginning of the college year an attempt was made to change the policy of the Academic Department in regard to the new Course in Arts. By the action of the Faculty of Arts and Sciences taken February 5, 1897, the sophomore class (graduating in 1900) was granted the same freedom of election as the other classes, so that beginning with September, 1897, all classes in the Academic Department enjoyed the same freedom of election. At the same time, with the exception of the class of 1900 relieved, as has just been said, of the required work of the second year, the Faculty of Arts and Sciences refused to excuse any one from the required work of the class with which he entered; that is, the members of the classes graduating in 1898 and 1899 must complete two years of required work, and the class graduating in 1900 one year. All petitions from members of the above mentioned classes to be excused from required work have been uniformly refused, as well as petitions to receive the new A.B. degree before 1901.

At the meeting of the Faculty of Arts and Sciences held October 1, 1897, the following motion was introduced: "*Resolved*, That the elective system be declared retroactive in the sense that all students now registered with the Faculty as candidates for a degree be eligible for the Bachelor of Arts degree if they so desire, provided they meet in full the entrance requirements in any one of the three groups designated on pp. 33-35 inclusive of the present Register (the Groups A, B, and C of the advanced requirements for admission to the new Course in Arts), and complete the full amount of University study. This resolution is not intended to relieve any student from the necessity of making up a condition in work already undertaken in the University." The above motion was laid upon the table until the next meeting of the Faculty, when it was taken up, discussed, and lost.

Reference has already been made in this report to a proposed change in Group C of the advanced entrance requirements to the new Course in Arts. This change was the subject of a conference held on April 15, 1898, at which were present the President, Deans White and Crane, and Professors Atkinson, Caldwell, Gage, Nichols, Tarr, and Wilder. The following resolution was adopted by the conference and the Dean of the Faculty of Arts and Sciences was directed to report it at the next meeting of the Faculty.

"1. It is the sense of the conference that a requirement in science be included in Group C of the entrance requirements as an alternate requirement for 3 (advanced mathematics).

2. That the above science requirement consist of one of the following sciences; physics, chemistry, botany, geology, or zoology.

3. The above requirement in science is intended to represent an equivalent for the advanced mathematics. The amount in each case to be indicated by the department concerned."

The above report was laid before the Faculty at the meeting of May 6, 1897, and after discussion was adopted.

The question of the relation of the Academic Department to the other Colleges of the University arose soon after the reorganization of the University in 1896. Prior to that change the Law School was the only separate college; and as early as 1891 (Records C, p. 556) juniors and seniors in good standing in the general courses were allowed to elect studies in the Law School, which should count toward graduation, both in that School and in the general courses, not to exceed one year's work in that School. This rule was modified later (December 4, 1896) to read: "But the sum total of hours so elected must not exceed the number for one year's work in the College of Law, and must not exceed nine hours in either year."

This action was (May 12, 1897) made of general application to all Colleges, and may be considered as the policy of the Academic Department so far as its own students are concerned.

As the Academic Department allows its own students to take not to exceed one year of work in other Colleges it would on the same principle allow credit for that amount of work to students who might enter the Academic Department from other Colleges, and this has been its policy. It was not so clear that the same course should be pursued with regard to purely professional schools elsewhere, and the subject was brought before the Faculty of Arts and Sciences at the meeting of March 4, 1898, and after discussion the following resolution was passed: "Credit not to exceed one year may be given for work done in professional schools by applicants for advanced standing."

It still remained to settle the policy of the Academic Department towards students in other Colleges who desired to take work in the Academic Department. Here again the policy previously pursued in regard to the Law School was made of general application. From the first, students in the Law School, with permission of the Faculty of the Law School and with the consent of the General Faculty of the University in each case, were allowed to elect courses in the President White School of History and Political Science, the department of elocution and oratory, or other departments. At the meeting of March 4, 1898, the following resolution was passed: ."Students registered in any other College of the University may, by special permission, elect work in the Academic Department."

The above resolution was a substitute for another which was intended to check a growing evil. Applicants for admission to the Academic Department who were rejected on account of entrance deficiencies may enter another College and then take the whole, or a large part, of their work in the Academic Department. A motion to forbid this class of students from taking work in the Academic Department during their freshman year was introduced and after some discussion the substitute mentioned above was passed. Each case must now be judged upon its own merits and the responsibility of the decision will be thrown upon the Dean of the Faculty of Arts and Sciences, as it is in the case of students in the College of Law who desire to take work in the Academic Department.

Owing to the lengthening of the course in the College of Law from two to three years, ingenious attempts have been made by the students in the Academic Department to take the two degrees in five years as under the old system. At the meeting of the Faculty of Arts and Sciences on the 14th of June, 1898, a petition was presented by a student asking whether on completion of his second year in the Academic Department he could enter the College of Law and by taking a certain amount of work in the Academic Department also, receive the two degrees in five years instead of six. The Faculty voted that it was not in accordance with the present policy of the University to shorten the time in which the two degrees could be taken from that announced in the Register, viz., six years

Another subject which engaged the attention of the Faculty was the question of the marking system. It may not be amiss to give a brief history of the development of the present system. Shortly after the opening of the University the Faculty (September 23, 1868) voted that students be marked on a scale of 5 very good, 4 good, 3 fair, 2 bad, and 1 very bad. A few months later (December 16, 1868) a resolution was introduced to mark students only "passed," "conditioned," or "rejected." This resolution failed and the Faculty formally reapproved of the scale of 5. This system lasted without change until October 15, 1875, when the committee in charge of what was known as the "Course Book," in which students' marks were officially entered, was requested to consider the propriety of changing the scale on which examinations were marked from 5 to 10. Nothing came of this proposal, and the old method continued in vogue for ten years. On October 23, 1885, a change was recommended in the scale of marking, but the resolution was laid upon the table and no further discussion of the matter tòok place until the following year, when (October 22, 1886) it was resolved that henceforth all reports of examinations be on a scale of 100.

At the meeting of May 20, 1887, the Faculty discussed the question whether all records of examinations and the standing of students, except as conveyed by the words "passed," "conditioned," and "failed," should be dispensed with. This question we have seen was debated as early as December 16, 1868. No action apparently was taken in the matter until October 28, 1887, when the numerical system of marking was discontinued in all elective courses and the terms "passed," "passed conditionally," and "not passed" were substituted for it.

At that time the same work might be required for one and elective for another, and a professor was obliged to use the two systems with the same class; and it was difficult to apply it correctly. It became necessary to define the intention of the original action, which was done on April 20, 1888, by declaring it to mean "that a study taken by any student which is elective for that student shall be marked according to the plan adopted for elective studies, although that study may be taken in a class with other students for whom it is a required study, and marked for them on a scale of 100 as formerly."

Difficulties at once arose in applying the new system, and on June 18, 1889, the Committee on Scholarships reported that it was difficult to determine the standing of scholarship holders on account of the above method of marking elective studies. These difficulties increased to such an extent that on May 21, 1890, the Faculty resolved that "beginning with the Academic year 1890–91 all elective courses shall be marked on the same scale as required work."

The system now was a uniform one of marking on a scale of 100, and remained undisturbed until January 17, 1896, when an attempt was again made to introduce four grades, namely, "dropped," "conditioned," "passed," and "excellent," each grade to be represented by a suitable letter. Various amendments were proposed, one that five, and another that but three grades be recognized, and that in the form for reports a column be reserved for remarks by professors. After discussion the whole subject was laid upon the table, where it remained until April 8, 1898, when the following motion was introduced: "*Resolved*: 1st, That the general system of reporting the standings of students on the scale of 100 be abandoned, and that the standings of students be indicated by the terms "passed," "conditioned," and "failed;" 2d, That in the form for reports a column be reserved for remarks by the professors." This resolution was made the special order for the June meeting, but was not called up.

On recommendation of the Dean, at the meeting of June 3, 1898, the maximum number of hours of work for all students was fixed at eighteen, and the minimum at twelve per week.

Owing to the establishment of the Cornell University Medical College the Medical Preparatory Course by action of the Faculty, June 3, 1898, was abolished from September, 1898.

At the meeting of May 6, 1898, the Faculty of Arts and Sciences adopted the resolution of the University Faculty passed at a special meeting on April 21, 1898, providing for the graduation in June *in absentia* of all members of the senior class in good standing who are or may become members of the regular or volunteer military or naval force of the country and are actually called into service, and recommending that a leave of absence without prejudice be given to all other students who enter the active military or naval service of the country.

Respectfully submitted,

T. F. CRANE,

Dean of the Faculty of Arts and Sciences.

APPENDIX IV

REPORT OF THE DIRECTOR OF THE COLLEGE OF LAW

To the President of the University:

SIR, I respectfully report:—that the total number of students registered in the College of Law for the present year is two hundred and ninety-six, or twelve less than last year. I said then that the change of our course from two years to three would be quite likely to reduce the attendance, temporarily at least, and anticipated a much larger reduction than the very slight one which has occurred. It is encouraging to note that the falling off is confined to the class of students in the University electing law as a part of their course, while the number of regular law students is larger than last year and indicates a moderate but steady growth. As a result of the lengthening of the course we shall have next year but two full classes, and the third or senior class will necessarily be very small. The changes in the conditions of admission, setting a higher standard of necessary preparation, which go into effect at the beginning of the next College year, may somewhat reduce the attendance and require a few years to overcome. Our registry shows the usual broad area of residence. There are two hundred and twenty-seven from New York, thirteen from Illinois, twelve from Pennsylvania, six from Missouri, five from Massachusetts, three each from Indiana, Iowa, and Ohio, two each from Connecticut, Michigan, New Jersey, Texas, Utah, Vermont, and Wisconsin, and one each from California, Florida, Georgia, Maine, Maryland, Minnesota, Nebraska, Tennessee, Washington, and Canada.

One graduate scholarship was awarded for the current year to Darwin Curtis Gano. The other was not awarded, no candidate being deemed worthy.

The summer school of last year had a largely reduced attendance. There were twenty-two in all: fourteen from New York, three from Pennsylvania, and one each from Indiana, Kentucky, Rhode Island, Texas, and Wisconsin. The experiment will be continued this summer, but unless the numbers increase and there seems a need of such a course beyond what is now apparent I shall recommend its discontinuance.

The course in practice and procedure conducted through the year by Mr. Newman has been very successful. He however declines to continue it or take a permanent position in our faculty, desiring to give his whole time to the business of his profession, and so it became necessary to appoint a permanent professor. I have realized the importance of the choice and after consultation with the President recommended to him Mr. Henry S. Redfield of Elmira, New York. The choice has been approved by the President after careful consideration, and by the Executive Committee of the Trustees. I hope the full Board will formally make the appointment and so give us the help we need in a very important direction.

I send herewith the report of the law librarian. The Trustees will be glad to observe that the most pressing needs of the library have been so far supplied that it is possible for us to reduce the amount of the annual appropriation for its maintenance. The report shows the present admirable condition of the library and the sum deemed necessary for the coming year.

The work of the year has gone on steadily and satisfactorily and without incident. I desire to commend the industry and ability exercised by the professors in their several departments.

The graduating class for the Commencement of 1898 numbered 105 for the degree of LL.B. and 5 for the degree of LL.M.

Respectfully submitted,

F. M. FINCH,

Director of the College of Law.

APPENDIX V

REPORT OF THE DIRECTOR OF THE COLLEGE OF AGRICULTURE

To the President of the University:

SIR :—The past year shows marked increase in the efficiency and scope of the work undertaken by the various divisions of the College of Agriculture. The number of students in the College is now much larger than in any previous year, and the corps of instructors has also been augmented. The College has outgrown the plant furnished for carrying on the extended and varied activities demanded by the Federal Government under the Morrill Act of 1862, the Hatch Act of 1887, the Act of 1890 supplementing the Act of 1862, and the State Act, Chapter 128 of the Laws of 1897, "for the promotion of Agricultural knowledge throughout the State."

INSTRUCTION AT THE UNIVERSITY

There have been twelve students pursuing graduate work in the College, five of whom received the degree of Master of Science in Agriculture at the close of the year. The increase in the number of students pursuing graduate work is very gratifying. There have been fifty-seven students in the regular course, thirty in the special course, total eighty-seven, an increase of thirty-two over last year. In the winter courses thirty-eight students in general agriculture and fifty-five students in dairy husbandry were registered. The total number of students during the year in all courses was one hundred and ninety-two, an increase of seventy-one. Of this number, seven were dropped for lack of scholarship and one removed for unbecoming conduct.

It is difficult to decide, as between these various courses, which tends most to the improvement of agriculture. The regular course aims to give both "a liberal and practical education." All who complete this course are wanted as leaders in agricultural education. The special students are in demand, if of sufficient age and experience, for managers of estates. The winter course students largely return to their parents' farms, though there is an increasing demand for experts to manage creameries, cheese factories, and milk stations which is, in part, supplied by the Dairy School.

I append a quotation from a letter received from Mr. W. W. Hall, our instructor in cheese making, who has inspected many factories in the State in the last few years.

"I have never seen so much to encourage me as I have this year. It has finally been demonstrated that St. Lawrence County cheese is being used to fill foreign orders that have heretofore been filled with the choicest Canadians. Our young men, as a rule, are doing their work better than any other makers I find. It is certainly a rest to go into a factory where one of them has the work in charge and listen to the intelligent report I get as compared to those who know nothing about the reasons for anything."

There have been, in all, one hundred and ninety-four students in the winter courses in dairy husbandry. Thirty-two of these were recommended for and received positions in factories. Thirty-four secured positions on recommendations of friends. Many others have found positions easily without any recommendations, but we have no official report of them.

The entrance requirements for the Course in Agriculture have been raised and are now equal to those for the Course in Arts. This gives opportunity to improve the course by adding four new courses of lectures, viz.: economic geology, 2 hours; veterinary science, 6 hours; sylviculture, 9 hours; and farm buildings, study of and designing, 3 hours.

BUREAU OF UNIVERSITY EXTENSION

The educational department of University Extension of Agricultural Knowledge throughout the State, both in quantity and quality of the work performed, shows great gains made during the past year. The farmers' reading course has a membership of 4,800, being an increase of more than 300 per cent over that of one year ago. The replies received to questions, arranged in the form of examination papers, show that the members have given careful thought to the subjects under consideration.

This reading course will be arranged to cover a period of four winters, with topics in logical succession. A written examination is to be provided at the end of each winter, and a certificate given to all who satisfactorily complete the full course.

Itinerant schools, held in rural communities during the past year, show good results. These schools will be modified somewhat in the future by making them more specialized in character.

The work in the public schools has also made rapid growth. Leaflets on nature study are now being supplied to 18,000 teachers, whereas only 10,000 were receiving them a year ago. Eleven leaflets in all have been published upon topics pertaining to rural life. Eight of these are designed to assist teachers in introducing and conducting nature study work in their schools. Three leaflets are designed to interest the children in flower and vegetable planting, improvement of home and school grounds, and to acquaint them with birds and their habits. These leaflets have been sent to 16,000 school children of the State. Other leaflets will be issued both for teachers and pupils as occasion requires. The children are being organized into Cornell Junior Naturalists' Clubs for the purpose of promoting systematic study of natural objects and for the exchange of correspondence and drawings. A teacher is now furnished at the Teachers' Institutes to illustrate and explain nature study work, and a corps of teachers was sent to the summer schools held by the State Department of Public Instruction during the month of July,

Most cordial support has been given to the work by the commissioner of agriculture and the superintendent of public instruction and his staff. The attempt to introduce nature study into the public schools has been received with favor by teachers, pupils, and parents, and the movement has extended not only over our own State but into other states as well.

INVESTIGATIONS AND EXPERIMENTS

All of the investigations undertaken under the Federal Act of 1887 establishing Experiment Stations are carried on at the University and, in many cases, are of such a nature as to require long periods of time if trustworthy results are secured, while most of the investigations carried on throughout the State with the co-operation of the farmers, under Chapters 128 and 67, yield results quickly.

Two hundred and seventy-two plats of sugar beets in twenty-four counties of the State were grown under our supervision and twenty plats were grown at the University. Five hundred analyses were made. The quality and yield of beets were unusually high. The average per cent of sugar in the juice was 16.91 per cent with a purity of 85.5 per cent; and the average yield, 16.95 tons of trimmed beets per acre. These averages are fully twenty per cent higher than those secured in the beet districts of Europe.

Two hundred and three experimental plats with fertilizers were conducted on as many farms, with various crops. Several plantations of large and small fruits have been under our immediate watch care during the last four years, the owners giving the Station full control as to treatment and kinds and quantities of fertilizers used. Added to this are the numerous investigations which are undertaken in fields, barns, laboratories, and forcing houses under both funds. A corps of twenty investigators give a part or all of their time to this work.

PUBLICATIONS

In July, 1897, an annual report of four hundred and sixty-eight pages was issued which embraced the publications of the Experiment Station, together with those of the College of Agriculture issued under Chapter 128 of the Laws of 1897. Two hundred and six cuts were used to illustrate the text. The work set forth in these various publications covered a period of six months, from January 1st, 1897, to July 1st of the same year.

From July 1st, 1897, to June 1st, 1898, eleven bulletins containing two hundred and seventy-two pages and one hundred and five cuts have been issued. The regular bulletin mailing list averages sixteen thousand.

Four leaflets have been issued during the same time which contain sixty pages and thirty-eight cuts. Five editions of leaflets 3 and 6, four editions of leaflets 4 and 8, three editions of leaflets 1, 5, and 7, and two editions of leaflet 2 have been issued during the last eleven months. There are eighteen thousand names on the teachers' mailing list and sixteen thousand names on the children's mailing list for these leaflets. Five thousand copies of farmers' reading course circulars, containing twenty pages and three illustrations, have been issued. Five thousand copies of the Announcement of the College of Agriculture were published, which did not fully meet the demand for them.

APPROPRIATIONS

The Federal Government makes an annual appropriation of $13,500 to the University for carrying on investigations and experiments. The work carried on under this appropriation is divided into six divisions—agriculture, horticulture, botany, chemistry, entomology, and veterinary science. A chief is at the head of each division. Three of these chiefs receive no salary and three receive a total yearly compensation of $4,000 from the federal fund.

Thirty-five thousand dollars were appropriated by the State Legislature, Chapter 67 of the Laws of 1898, to the Cornell University College of Agriculture, for the promotion of agriculture throughout the State. The combined efforts of the Experiment Station and the corps of workers employed under Chapter 67 are directed towards helping both old and young to knowledge which will not only educate and elevate all classes but which will also tend to the adoption of more intelligent, rational, and economical methods in rural affairs. Twenty trained persons are now employed in the work carried forward by the Federal Station and in the two co-ordinate bureaus—instruction and investigation—into which the work for the promotion of agriculture throughout the State is divided.

The use of offices, laboratories, libraries, farm, and plantations, as well as valuable time of unsalaried chiefs, are all given without charge to the State or federal fund. The economy and wisdom of this close union between the College of Agriculture, the Experiment Station, and the efforts of the State for the promotion of agriculture, will readily be seen. In addition to the above, the University makes large appropriations for carrying on the Dairy School, the farm, and the instruction in laboratories and class rooms. It is doubtful if anywhere on this continent so extended, far-reaching, and universal efforts are being made for the promotion of agricultural knowledge among all classes as are being made at the present time by Cornell University.

NEEDS

I desire to call attention again to the urgent need of sufficient and suitable rooms and other facilities for carrying on the extended and varied duties delegated to the College of Agriculture by the Trustees of the University.

As yet, no private benefactions have been tendered to the University for the exclusive use of the College of Agriculture. This is rather surprising since ninety per cent of the inhabitants of the world are engaged in tilling the land. "That art on which a thousand" five hundred "millions of men are dependent for their sustenance," and more than a thousand millions "of men expend their daily toil, must be the most important of all; the parent and precursor of all other arts. In every country, and at every period, the investigation of the principles on which the rational practice of this art is founded ought to have commanded the principal attention of the greatest minds."

Applied agriculture and the Experiment Station now occupy 3,000 square feet of floor space in Morrill Hall. At least 6,000 additional square feet should be provided. The horticultural division of the College, including the Bureau of University Extension work, has 2,000 square feet of floor space also in Morrill Hall. Three thousand additional square feet of space should be furnished. The entomological division, not including the insectary, occupies 3,000 square feet in White Hall. Double this room is needed at the present time. Ample additional space should be provided for a general museum for the College. The class rooms and working museums are provided for in the 20,000 square feet needed for the three divisions indicated above.

Since forestry and sylviculture are so closely related to the work of the Agricultural College, might it not be well when providing for the needs of the one to consider the other? Much would be gained in many ways by housing both of these colleges in one structure. A main building 60×80 feet, with two wings, each 100×50 feet, three stories high, exclusive of basement, would be necessary for both colleges.

In my last report I called attention to the urgent need of more land for the use of the Agricultural Department. This need increases, and now added to it come pressing demands for more lands for the use of the horticultural division. There is no suitable land for a vineyard or for an orchard of standard trees. It is now eight years since the present horticultural division was established and, as yet, there is no vineyard or standard orchard on our grounds. May I not urge that these pressing needs receive early, careful, and effective attention?

Respectfully submitted,

I. P. ROBERTS,

Director of the College of Agriculture.

APPENDIX VI

REPORT OF THE DIRECTOR OF THE NEW YORK STATE VETERINARY COLLEGE

To the President of the University:

SIR :—The total number of students in the regular Veterinary Course has been 17 as against 11 in the previous year and a steady increase may be expected, when intending students will have had time to complete the high school work which has not been heretofore demanded for matriculation in veterinary medicine. These students were drawn as follows: from New York 13, from New Jersey 2, from Tennessee 1, and from Nova Scotia 1. Four candidates received the degree of D.V.M.

It is gratifying to be able to state that all our graduates of 1897 passed the Regents' examination for license to practice, receiving very high marks, while of all candidates from other schools, who have appeared before the Regents' board in the past three years, only one fourth received marks high enough to permit the granting of a license. One of our graduates secured the highest marks granted by the board of Regents' examiners, and, among thirty-two candidates, only four reached the grade attained by our poorest graduate. We may therefore justly claim that we have already achieved the object of our foundation—the improvement of veterinary education—and we may confidently hope to raise the character of the whole veterinary service of this State and incidentally of others.

In addition to the veterinary students, 125 drawn from other departments of the University have taken work in the Veterinary College, fifty of these having been from the short winter course in agriculture.

ANATOMY

In this department the experience of the first year of our college work has led to the introduction of even better methods, with manifest improvement in results. Dr. Hopkins finds that the high quality of the men who entered last year on the 48 Regents' counts, fully justifies the increased requirements for matriculation. Four theses have been prepared in the department. Valuable additions have been made to the anatomical museum and laboratory, materially improving the means of tuition. Important investigations have been made, and among literary productions may be named a review of Jayne's Mammalian Anatomy made for the Philadelphia Medical Journal.

The department specially needs provision for cold storage, a hot water supply, additional skeletons, and art preparations. The last two items would probably cost $200.

PHYSIOLOGY

Dr. Fish has materially extended the course of the previous year, introducing more laboratory work on digestion, sanguification, and secretion in the different genera of animals. The value and thoroughness of the work was fully appreciated as shown in its election by students and graduates from university courses outside the Veterinary College. Important additions have been made to the physiological apparatus.

PHARMACOLOGY, PHARMACY, AND THERAPEUTICS

The first two subjects have been considerably extended, and supplemented by a course on therapeutics which connects them with medicine and surgery and makes them of special value to the advanced student.

Dr. Fish has made valuable additions to the museum and among his literary labors, has prepared a second report for the Behring Sea Commission on the brain of the seal; also a paper on The Nerve Cell as an Unit for the Journal of Comparative Neurology. Special investigations and research have been made by graduate and senior students in the laboratory.

MICROSCOPY, HISTOLOGY, AND EMBRYOLOGY

The recognized excellence, of this department has been fully maintained and appreciated in the past year. It attracted 52 students of whom 7 were veterinary. Three professors and two instructors elected work in the department. The facilities have been better than ever before and the work accomplished more extended and thorough. Three men have taken their theses in this department and special research has been pursued by graduates. The admirable work of Dr. Kingsbury has procured for him the distinction of assistant editor of the Journal of Comparative Neurology. Professor Gage estimates that $250 per annum could be most profitably expended for purposes of illustration in the department.

BACTERIOLOGY, PATHOLOGY, AND MEAT INSPECTION

This department has not only maintained its former high standard, but with time, experience, and opportunity, has materially improved in methods and results. Now that the students have had a more thorough preparatory training in other departments, it has become possible to start them in special investigations on cases occurring in the clinic or outside, thus arousing enthusiasm, giving prominence to the practical scientific side of the work, and training the individual for independent observation and investigation. Thirty-two students took work in the department of whom two were veterinary and three graduate. Two theses were prepared in bacteriology.

Preparation of Mallein and Tuberculin. The preparation of these agents for diagnostic purposes in the work of the tuberculosis commission and of approved veterinarians in this State, has grown with a steadily increasing demand, and the laboratory can now furnish them on an extensive scale. They are furnished to approved parties in the State at the cost of packing and shipping as a contribution to the sanitation of our herds and food products.

Special Investigation of Epizootics. Much work has been done by this department along different lines of investigation, including toxic action on swine of the powdered soaps which are allowed to go into kitchen swill, rabies, anthrax, infectious abortion, Texas fever, tuberculosis in swine, swine plague, hog cholera, infectious cellulitis, contagious mammitis and other affections. Reports on a part of this work have been furnished to the commissioner of agriculture, the Agricultural Experiment Station, and current journals and newspapers.

Material and Equipment. Many additions have been made to the museum and laboratory equipment in the lines of gross and microscopic morbid specimens and cultures, a house, has been built for small animals, ensuring a more certain supply of these for purposes of investigation, and the prospect for effective work is much better than at any time in the past.

Needs. To furnish a small crematory, and provide a hot water supply an outlay of $500 to $600 would be very advantageous.

VETERINARY SURGERY, OBSTETRICS, AND JURISPRUDENCE

In clinical surgery there have been nearly double the number of operations that were performed the previous year (700 up to date), so that the advantages to the student operator have been so much the greater. The introduction of operating tables, stocks, and other means of restraint for operation, without contamination of the air, has secured more thoroughly aseptic work and demonstrably better results. A large number of castrations, almost all aseptic though done by student operators, furnished the basis of a thesis by one of the candidates for graduation. The performance of the operations by the students, which is practiced in this College only, in English speaking countries, continues to be fully justified by results.

In the course of the year Professor Williams has published a number of monographs including Three Recoveries from Glanders, Infectious Abortion in Mares, Parasitic Ictero-Hæmaturia in Sheep, Luxation of the Patella in a Foal, Inhalation Pneumonia, Caudal Myotomy and Clinical Reports.

In this department there is an increasing demand for new instruments, sterilizing apparatus, and provision for the care of patients when removed from the operating table while still under anæsthesia. For these and experimental work $350 could be very profitably used.

VETERINARY MEDICINE, SANITARY SCIENCE, AND PARASITISM

Eleven veterinary students have pursued these studies with gratifying success. In a special course for agricultural students 58 were enrolled of whom 50 were from the short winter agricultural course. Four students prepared theses under my direction, of which three were for the degree of D.V.M. and based in part on original work. Special investigations have been made in a variety of animal diseases, notably in anthrax, blackquarter, tetanus, canine distemper, and contagious abortion. The last named subject has of late been held in temporary suspense for lack of means, but we had already secured valuable results which will be published in part in the yearly report of the commissioner of agriculture.

In the course of the year the following articles of mine have been published: Anthrax, Rabies, Glanders, and Actinomycosis in the American System of Practical Medicine; The Minimum Requirements for Matriculation in Veterinary Colleges, and The Preparation of Morbid Material for Shipment to the Pathological Laboratory. The first volume of my text-book on Veterinary Medicine was published over a year ago, and the second and third volumes are now ready for the press.

The department needs additional facilities for class room and clinical work which must however be deferred until more means can be secured.

ROSWELL P. FLOWER VETERINARY LIBRARY

When this College was inaugurated there were in the University library about 5,000 volumes on veterinary, medical, and cognate subjects available for our students. Yet with the rapid advances in aseptic surgery and in bacteriological pathology in the last few years, there was great need of the most modern literature in all fields of medicine to enable the school to do the best possible work. This need has been handsomely met by the gift to the University of $5,000 by Hon. Roswell P. Flower to found a special veterinary library for the use of the College. More than half of this sum has already been expended in procuring the best modern literature on the different subjects taught so that students and investigators have now excellent facilities for original work. The College has also secured the library of the late Dr. John Busteed, founder of the New York College of Veterinary Surgeons, embracing a number of rare and valuable books, dating from the classic work of Carlo Ruino (1602 A. D.) to the present time. This further contains a number of fine water color drawings, life size, in veterinary anatomy by the late Dr. Busteed, and the classic folios of Gurlt, Stubbs, Brunot, Leblanc and Trouseau, Snāpe, Blaine, and Leisering in artistic, descriptive and surgical anatomy.

With gratitude to the generous donor we recognize that we stand to-day first in library facilities, as in other respects, among the veterinary schools of the Continent.

SEMINARY AND THESIS WORK

The seminary for the presentation and discussion of the results of research and of the work done on theses has been continued in the current year with the best results. Criticism of methods, suggestions as to parallel and supplementary lines of work, and above all a training in the best methods of presenting results have been of a high educational value to the members.

SOCIETY OF COMPARATIVE MEDICINE

Though this is essentially a students' organization conducted by the undergraduates in both schools of medicine, it must be recognized as at once a means of education and a fruit of the tuition furnished. In this society the students receive training in parliamentary methods, in the amenities of debate, in the careful preparation of subjects for discussion and in the many-sidedness of medical topics. It has done much to give the student breadth, comprehensiveness, and soundness of view and to train the prospective practitioner for the work of life.

Respectfully submitted,

JAMES LAW,

Director of the New York State Veterinary College.

APPENDIX VII

REPORT OF THE PROFESSOR IN CHARGE OF THE COLLEGE OF ARCHITECTURE

To the President of the University:

SIR :—I have the honor to submit for your approval the following report: The Faculty of Architecture has had a good opportunity to test the new course and the general policy of teaching and study which have been operating during the year. We are satisfied that more has been accomplished than we had hoped for and are able to illustrate our statement by means of our June exhibition which contains those drawings which received the grade of mention or better. The public exhibitions and criticisms have produced a healthy and stimulating rivalry among the students. A very interesting atmosphere has also been created through the intercollegiate competitions instituted by the Society of Beaux Arts Architects. In all the classes there are men who have worked with the enthusiasm and industry of the French school, while in a few instances the quality shown has been very close to the high standard set by the École des Beaux Arts.

Freehand drawing and modeling have received a vigorous impulse through the valuable collection in the museum of casts. An appreciation for form and for the relation between architecture and sculpture may be attained in no other way than through knowledge of and ability to draw the human figure. It will be necessary in the near future to provide for a class in drawing from the nude, lest the designer, in his observation, be limited to the more severe lines of classic art.

Appreciating how little chance there is for the architect of to-day to know of the art of the past and of the present, a short course of lectures on the history of art will be given by Professor Brauner. These lectures are to be more or less informal and will be open to any one interested in that subject. During the year four lectures were given by men eminent in several professions. Thomas Hastings of New York chose for his subject Art in the Floor Plan and Modern Architecture; Albert Kahn of Detroit spoke on The Renaissance of Architecture in Italy; Albert H. Munsell of the Normal Art School, Boston, chose for his subject Mural Decoration; and Walter C. Larned of Lake Forest, Illinois, lectured on From Chinon to Mont St. Michel. Arrangements are being made with Professor Herbert Everett of the University of Pennsylvania; with John M. Carrere and others for the coming year.

With our great effort toward increasing the aesthetic side of the work it is not strange that some fear has been expressed that we might be in danger of weakening the constructive side. The facts in the case are these: the construction has been nearly doubled over that of last year and the course in mechanics has been changed from three hours to four. The former courses in geology, lithology, and mineralogy have been changed to one short course in economic geology presented from the practical point of view. This will be under Dr. Ries, whose reputation as an authority on clays and building stones is well known. Chemistry and physics have been dropped from the course. A two-year special course has been added for the benefit of men who, after having become strong draughtsmen with a general knowledge of the details of good architecture, feel the need of a course of study which will supplement their already acquired knowledge. It is the experience in schools where such courses exist that such men are usually serious and accomplish a great deal in their shorter stay.

The College has been given a great stimulus in the traveling fellowship which has been recently announced. Comments have come from alumni situated in many places remote from the University and the general feeling shown is decidedly favorable. The graduate fellowship of the value of $500 which has been in existence for several years has always been open to graduates of other schools of architecture. The fact has not formerly been widely known, but this year printed slips calling attention to this point were sent out with the circulars relating to the traveling fellowship.

The College Annual which is soon to appear will contain cuts of the best drawings executed prior to April 15th. It is considered an honor to be represented in this publication.

The Faculty of Architecture is very appreciative of the moral and material support given the College by the President and the Board of Trustees. The College is bound to grow and in a short time the question of a new building will have to be considered. I should like now to make a strong plea for a building or group of buildings which in mass and in choice of detail would be a daily object lesson to the student of architecture; which in sculptured adornments would contain the work of the foremost sculptors of the age and which in mural decoration would be a constant inspiration to all who are fortunate enough to study within the walls.

There is not in the United States to-day a school of art or of architecture which is organized on a really broad basis. In the schools where painting and sculpture are seriously studied the architectural atmosphere is not sufficient to merit comment. In the foremost schools of architecture the students become familiar to a certain extent, with charcoal drawing and clay modeling, but with very little else of the allied arts. What kind of preparation is this for the men who are to design aud supervise the erection of the notable buildings of the future in this country?

Therefore, Mr. President, I affirm that the only organization which can really be considered broad and upon a lasting basis is a College of Fine Arts with architects, painters, and sculptors all working in the same inspiring environment. Anything less than that would be, I believe, a mistaken policy. One million dollars is the least sum that should be considered for the erection of a building, exclusive of sculpture and mural decorations, and as much more should be available as endowment for the purchase of paintings, objets d'art, books, drawings, models, etc., etc.

At Cornell University we have advantages which few places can equal. With the above equipment and endowment as a guarantee of good quality, the College of Fine Arts would prosper, for at no art school in the country would there be the same opportunity for University life with its interesting local color and its democratic spirit. Nowhere can be found a more beautiful entourage than that enjoyed by Cornell University and I venture to say that the art student would find in the everchanging colors of the distant hills a daily lesson in tone and color harmony which would do more toward the development of color sense than anything which the large cities could offer.

Respectfully submitted,

ALEX. BUEL TROWBRIDGE,

Professor in Charge of the College of Architecture.

APPENDIX VIII

REPORT OF THE DIRECTOR OF THE COLLEGE OF CIVIL ENGINEERING

To the President of the University:

SIR: I have the honor to report that the present condition of this College of the University is as efficient as the faithful efforts of its teachers and administrators can secure.

Every improvement made in our courses of study entails, necessarily, additional expenses. This ever increasing demand for money is like a tide that cannot be stemmed; and as with all tides, when the ebb begins it is preceded by stagnation, which is followed by retrogression. I am ready to do my part to prevent retrogression, if my efforts meet with the sympathy and aid of the Trustees. Our progress is urged forward by the growth of the industrial interests of the country as well as by the great engine of emulation, which seems to force the best efforts now being made by schools similar to our own.

A less concise statement of our general needs will be found elsewhere.

Our great hydraulic laboratory needs a large amount of money. This magnificent undertaking, in which Cornell University is the pioneer, has called to it the attention of the world, even in its remotest corners; but it will require large sums of money for some time to come to make its power active and its true value felt. In spite of the large expenditures already made upon it, we have thus far only created a huge engine of possibilities. These cannot be realized without further and larger expenditures, unless the influence of the University is able to interest in its behalf some state or national department, or some wealthy man of public spirit, who, I am sure, could be easily persuaded as to the importance of this laboratory to the welfare and advantage of large industrial, commercial, municipal, military, and scientific interests. This laboratory, which should be named after the far-sighted man who will endow it with sufficient funds, would become a source of delight to him in his life-time and an honor and glory to his posterity and to the times in which he lived. Even if my acquaintance could justify the searching after this benefactor, my present cares and whatever ability and effort I might command keeps me so busy with necessary duties incompatible with such a search, that this important function must be lodged elsewhere. I would respectfully suggest the interesting of the War Department in behalf of this laboratory. The improvement of our harbors, natural and artificial water ways, and coast defenses, are momentous problems in charge of the United States Engineer Corps; and fabulous sums are spent yearly by our people for these purposes. No one better than these government officers could appreciate the advantages of such a laboratory for the practical solution or trial of theories, which, in their present condition, give rise to much tentative work. This sort of work is accompanied by bewildering difficulties and is generally expensive. The cases are many in which it is impossible to discover the true mechanical conditions of water attack; for it takes place under infinite varieties of forms and reactions in different localities, developing enormous forces which cannot be measured by induction from, as yet, unknowable data. This laboratory could furnish the means that would enable the hydraulician to subjugate the terrific powers of water in destructive motion, and make it an obedient slave, to serve purposes for which water has not yet been tamed. Such help as the War Department could give, well within its administrative scope and duties, I believe, could be demonstrated to be of vast utility.

Aside from the two military schools and the magnificent land grant gifts, which, with few exceptions, have been frittered away without resulting adequate benefits, the government of the United States has done nothing directly for the benefit of advanced education. The government has left this important function to the separate states, which so far have only cared for the threatened safety of the public schools. The signal progress made in this country in the higher education is almost entirely due to private personal benefaction; whilst France spends, yearly, not far from $50,000,000 in its industrial and technical education. The German government spends probably $200,000 for every million and a half of the inhabitants of its city populations. Switzerland maintains at great expense a large technical school; and in addition, cantonal and municipal appropriations, contributed cheerfully, increase the efficiency of these schools. The city of Zurich has a laboratory quite similar in intent to the idea represented by this suggestion, though it is not devoted to hydraulics for obvious reasons. Its personnel and equipment is paid for by the Federal Government.

For the present, I have to request of the Board of Trustees that they be pleased to place to the credit of this College as a special appropriation for this laboratory, the sum of $75,000. This amount will be used, as fast as possible, in the design and construction of a portion of the special apparatus needed. The nature of this apparatus is such that its design, at present, cannot be anticipated. It must be developed and built up with the evolution of the laboratory itself, which is planned for hydraulic investigation devoid of previous precedents. When problem after problem may be reached, I will submit for your approval such drawings, estimates, and explanations as may seem necessary.

I foresee also, that next year $100,000 will be required. This figure is not based upon estimates of the materials and labor to be furnished, but rather upon the capacity of the personnel of this College to design the necessary apparatus in view of the time at our disposal.

An active correspondence has so far failed to find the right sort of a man to be given, under my direction, the superintending charge of this laboratory; but I have not yet exhausted the many lines or places of inquiry still open to us. The uncertainty of at least an approximate knowledge of what the Trustees are willing to offer in the way of salaries is a hindrance to these negotiations.

I again respectfully repeat the urgent necessity of improvement in our geodetic training observatory. Its present condition entails inconveniences and places upon this College responsibilities which cannot be discharged as well as should be expected.

Permit me to request that a new building be erected to house this College of the University. We have completely outgrown the interior capacity and arrangements of the present building. We need more and better museums, laboratory facilities, lecture, drafting and class room accommodations.

Since it may appear proper to concentrate the agricultural buildings, I would suggest that the proximity of the model creamery building to this one, would seem to make it desirable to house in it the College of Agriculture. There is here an abundance of room; and, in so far as I can see from the equipment of ours and other agricultural colleges, the number and size of our present rooms can be at once adapted to the uses of the professors of agriculture and of allied chairs, now scattered in several buildings.

At the end of the scholastic year, only four freshmen were dropped from the University; two sophomores were suspended by the Faculty; three juniors were dropped for poor scholarship; and seven seniors were not considered sufficiently well prepared to receive their degrees.

I remain,

Very respectfully,

E. A. FUERTES,

Director of the College of Civil Engineering.

APPENDIX IX

REPORT OF THE DIRECTOR OF THE SIBLEY COLLEGE OF MECHANICAL ENGINEERING AND MECHANIC ARTS

To the President of the University:

SIR :—The Director of the Sibley College of Mechanical Engineering and Mechanic Arts respectfully submits the following statement relative to the work of the collegiate year 1897–98:

The year now approaching its close has been one of quiet and steady and efficient work in all departments. There have been no important changes in the curriculum and no considerable additions to equipment in either machinery or buildings; in which directions we are now beginning to feel seriously hampered once more as the classes entering under the recently advanced requirements increase in numbers and as the elevation of the work of the courses in graduate and undergraduate schools demands more space and new forms of apparatus.

The graduating class of '97 numbered about 130; that of '98 numbered 87 and was the first to graduate under the present system and curriculum. The difference represents the extent to which we are, under the later entrance requirements, raising the quality of the student-body by rejecting something like fifty per cent of the numbers capable of entering under the older system and of complying with the still usual demands of good and well-known schools. The alumni of the College have already made for the University an excellent reputation in this department; the alumni of the present and later years will, it may be confidently anticipated, confirm the impressions made by their predecessors and raise the standard still higher. The following is the census for the current year and the summary for preceding years to date:

SIBLEY COLLEGE OF MECHANICAL ENGINEERING, 1897–98

Senior Class	56
Junior Class	86
Sophomore Class	126
Freshman Class	179
Special Students	16
Total	463

UNDERGRADUATE LISTS, 1885–98

	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98
Enrolled	63	106	168	220	283	369	428	501	546	556	485	493	466	463
Graduated	*5	19	22	32	54	52	90	93	81	90	110	130	87	

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*Until the year 1886, no students in electrical engineering were formally registered in Sibley College.

Scanning this statement, it will be observed that a sudden drop occurred in total numbers, four years ago, and that a similar drop, of less proportional magnitude, however, occurs the present year in the number graduated. Including graduate students, and optional and other odd cases escaping the census, these numbers were, as maxima, about 600 and 130, as minima 463 and 87. These changes were due to the inauguration of not only high but unprecedentedly high entrance requirements, with even more than corresponding strengthening of the undergraduate courses. The results, in other directions, were a decided gain by accepting only the better half of otherwise acceptable candidates for admission, and the raising of the whole course of instruction to a much higher plane; while, because of the better preparation, and especially of the stronger average quality of the men accepted, the condensation of a considerable amount of what was formerly graduate work into the undergraduate course occurred; thus immensely improving and strengthening it, and giving its graduates a most important gain in their position relatively to competition, from all quarters, in their later professional life. It may be safely asserted that no man who has taken full advantage of his opportunities in this direction at Cornell University need fear rivals in later life, other things equal, in any department of professional work, scientific or technical, theoretical or practical.

Despite this reduction of numbers, with improvement of quality of men and of courses, the College still sends out by far the largest number of graduates in mechanical engineering, receiving diplomas from such schools, in the United States. It is also stated by foreign visitors and correspondents that no European schools have yet developed the most important advanced work which distinguishes our courses,—that in the laboratories of science and engineering, and especially in special professional experimental and research work, considered as a part, and an essential part, of such professional courses,—to nearly the same extent as have the engineering schools of Cornell University. The elevation of our requirements to this exceptional altitude was forced upon us by the fact that the flood of applicants was becoming too large to be properly handled and some method of restriction had become necessary. The experiment was ventured upon with some misgivings and in the face of many, and often sharp, cautions and criticisms from friends of the institution; but it has, from the point of view of the time and of the circumstances, proved a completely successful one; and this success has done much to sustain and enhance the reputation of the College and of the University for excellent work in professional departments.

Numbers have now reached the minimum, and are expected to again increase, and the formerly familiar difficulties due to restricted space and excessive numbers must be faced once more and provided against, on the principle that "in time of peace we should prepare for war." The time is rapidly approaching when we shall very seriously need greatly enlarged accommodations, a larger and more varied and complete equipment, and, especially and most imperatively, a larger and more stable and complete organization. The class of '97 was the last and the largest, by far, of the classes passing through the older course; that of '98 is the first, and a good sample, of the class of men to be expected to be turned out, and to enter the profession, under the later arrangement. The former have been found very satisfactory accessions to the ranks of the profession; it may be confidently anticipated that the latter will prove themselves leaders, in due time.

Of all the young men admitted as junior members to the American Society of Mechanical Engineers, already a large proportion, an abnormally large proportion, have come from this College. The proportion should be still higher in the immediate future, should it prove practicable to continue to hold our present relations to the colleges of the country and to the profession; and this will be something of a gauge of the worth of the men and of the courses of theoretical and practical instruction given our graduates.

The constant and urgent call for teachers in the now numerous and growing schools of engineering, and the manual training schools of the country, constitutes another evidence that our courses are of the right character and of the highest quality. We have been unable to provide all thus called for; but we have now representatives in almost every such institution, collegiate or other, in the country; and the most important and prominent positions are coming to be held, in a most gratifying proportion, by our alumni in this field, as well as in strictly professional work. In fact, this demand, coupled with our inability to offer the market value of such men of special ability, and so peculiarly adapted to the teacher's work, places us at a serious disadvantage, and we have become an extensive training school for the technical staffs of other institutions. We thus often lose the men who can least be spared; although worth more to us, and capable of doing more and better work with us, than in other institutions, or elsewhere. No greater need is, to-day, felt than that of being able to select and retain, at fair and even liberal salaries, the very best of our own graduates, where especially well fitted to become successful teachers. We here compete with the outside and commercial markets; for no man should be given a place in the organization of any school of engineering, even in teaching applied sciences, who has not had sufficient business experience to enable him to give a practical turn to his every problem and principle.

At the present time, many of our graduates, and some of our undergraduates, are finding their way into the military and naval services of the United States. They report themselves as finding the examinations easy, the work already largely familiar, and the prospects of successful and reputable service entirely satisfactory. Their peculiarly advantageous special laboratory and outside training, in the handling of machinery practically and in the making of scientific tests of engines, boilers, and the machinery of electrical transmission, have proved to be particularly helpful. It is hoped and fully anticipated that they will prove to be of exceptional value to the country in the present emergency.

Some are going into the army in the special engineer organizations; and there they will find use, in many ways, for their professional attainments and will probably prove peculiarly helpful where electrical engineering in the handling of the telegraph and telephone lines, the laying of mines, and other such work, demands their special knowledge.

The equipment of the College is still slowly improving, and steadily growing. It requires extension and reinforcement in many ways, however, before it can assume the extent, or the symmetry, desired by the heads of departments and the Director. It will require considerable accessions to meet the requirements of still unattained conditions of growth and of elevation of courses; and greatly desired new schools, new laboratories, and special buildings, with their equipments and endowments, continue to offer to friends of the University and of the College, desirous of taking part in a great work, opportunities for large investments in ways that will yield handsomely in good works and in reputation, both to the University itself and to its benefactors in these directions.

The new School of Railway Mechanical Engineering and Locomotive Construction is not yet provided with a home, or with its special equipment. "Railroad men" and their friends have there their opportunity. The School of Marine Engineering desires an outfit for its projected researches, and the departments of electrical engineering and of experimental engineering offer unprecedented and unrivalled opportunities to do a great work by completing their plans for grand investigations and for improved courses of routine instruction in applied sciences. They need and can use, as perhaps can no other such institutions, here or elsewhere, vastly increased facilities for higher and broader instruction and inconceivably important researches in the various departments of engineering and mechanic arts.

There is also opportunity to at once make admirably productive investments in this field and to give the founders fame as permanent as their establishments, in the foundation of many and much needed new fellowships and scholarships for this class of students. Such foundations are required to aid talented, but impecunious, young men in their endeavor to secure that instruction which is essential to their professional success. Such men pay largest dividends upon the funds thus invested. Foundations for new schools and laboratories falling properly into our scheme of a college of the mechanic arts and engineering will promote research; foundations of fellowships and scholarships will produce men, —and such as our country to-day most needs.

The review of the year discloses a story of quiet, steady, always fruitful labors in all departments; entering students are of rare and still improving quality; instruction and the curricula show no less steady advance; improvements in detail of courses, of methods, of equipment are continuous; research and original authorship remain distinguishing characteristics of the work of the Faculty; while the work of advanced students, and often even their own researches, are adding value to this section of the work of the College. In every department and in every branch of departmental work, experimental and research work is a product of peculiar value, and the transactions of learned and technical societies are steadily securing a larger and larger proportion of their contents from our laboratories and departments. The transactions of the A. S. M. E., in the last volume completed, 1897, credits 35 per cent of all the titles of papers to the members of the Faculty of this College and their pupils among our alumni. The year has also seen the publication of several treatises; of these, books and papers as well, the President's official bibliography of the University will give the larger part.

As has come to be the customary annual statement, it may be said in summary: our gains in extent, character, usefulness, and fruitfulness of the courses of study in the several schools of Sibley College are steady and satisfactory; numbers of new students are increasing with healthful rapidity; the work of the institution is becoming more and more widely and favorably known; our "drainage area" is constantly extending; our graduates are doing their full share of the work of their profession, and are taking more than a full share of the work of technical and professional instruction of the country; specialization is, in the limited degree in which it is here undertaken, proving wise and wholesome; new schools are proving more and more practicable and more and more easy of foundation, both from the point of view of finance and from that of adaptation of existing facilities to their formation. The always costly, though often unnoted, building of foundations for our planned superstructure is substantially completed, and a broad and lofty construction of graduate schools, built upon this undergraduate base, only needs moderate pecuniary support to become all that its most earnest and enthusiastic promoters among founders and friends and alumni have hoped for. The special branches of our work, in advanced mechanical engineering, including electrical, marine, and locomotive and railway mechanical engineering, are successful; the new Graduate School of Railway Engineering will do its part, another year, independently; we only need sufficient backing, through a "partnership with capital," to place beside the established schools others of textile construction, of mining machinery, of industrial design. In fact, we are already prepared with the major components of many special schools of mechanical engineering and of the mechanic arts.

Our progress will now be dependent only upon our finances. The intellectual side will develop just as rapidly as available capital will permit; and it may now be safely asserted that nowhere else, and with no other form of investment, can capital supplied be made to give larger and more satisfactory returns than when invested in the furtherance of the great work here inaugurated by the founders of Cornell University and of Sibley College. Each new foundation would do much for the country and would make the founder known for all time, through an imperishable memorial. A single foundation, as of the "laboratory of mechanical science dedicated to the promotion of the industrial arts through research," already more than once suggested in these reports, with its equipment of buildings specially adapted to that peculiar work, with its professional chair and staff, and its apparatus of research, would be an institution as important and fruitful as unique; and no department of life, or of scientific investigation, offers nobler opportunities to make an investment of large productiveness than does that of which Sibley College is the exponent—the mechanic arts and mechanical engineering in their many and constantly growing divisions. In this direction, every smallest contribution of capital gives constantly increasing returns.

Meantime, we send into the ranks of the profession which they have chosen, each year, a hundred young men singularly well fitted, as experience shows, to quickly adapt themselves to the requirements of the age and of the vocation, and to accept the largest responsibilities, and, in later life, to take their full share in all great works.

Respectfully submitted,

ROBERT H. THURSTON,

Director of the Sibley College of Mechanical Engineering and Mechanic Arts.

APPENDIX X

REPORT OF THE WARDEN OF SAGE COLLEGE

To the President of the University:

SIR:—I have the honor herewith to submit my first annual report as Warden of Sage College. The details as to the changes made in the headship of Sage College and the adoption of the title of Warden, were given in your Report of 1896–97, pp. 39–40.

During the current year, besides Sage College, Sage College Cottage, the building on Central Avenue remodelled for the purpose, has been open for the first time as a residence hall for women students of the University. As a result of these increased accommodations, a larger number of women students than ever before have availed themselves of the opportunity for residence in the University buildings. Although the Cottage and the College have separate drawing rooms, students in both buildings take their meals in Sage College, enjoy equal use of the gymnasium, and are regarded as forming in every respect one community, under the charge of the manager, the instructor in physical culture and the Warden of Sage College.

There have been prepared this year new circulars of information regarding Sage College and the Cottage, giving detailed plans of both buildings and full information concerning residence in them.

The number of students in residence at the beginning of the first term was in Sage College, 124; in the Cottage, 28; at the beginning of the second term, in the College, 119; in the Cottage, 32; at the beginning of the third term, in the College, 125; in the Cottage, 31.

A small number of students leave the University during each year, some for reasons connected with their families, others because they are unable to keep up with work, and others again, upon the completion of their course. Last year accordingly showed towards its close a decrease in the number of students resident in Sage. The increase in numbers this year, therefore, of the third term over the first, shows an encouraging increase in popularity among the women students, of the University buildings as places of residence.

ACADEMIC WORK

On the academic side of the life in Sage College, there is but little to report. The high proportion of awards to women both in the Phi Beta Kappa and the Sigma Xi societies this year sufficiently demonstrate the satisfactoriness of the work done. The women students have not as yet shown the need of being pressed in order to keep up the standard of their work. Indeed, we have attempted rather to check the tendency to overwork and regulate the time spent in study. During the second term examinations the general health of the students was better and the whole tenor of life more rational and controlled than during those of the first term. The change was due not alone to the fact that the freshmen had become used to the examination system, it was the result of a deliberate appeal made to the students and a deliberate effort made by them. There is every reason to hope that the time will come when examinations will be taken as a part of everyday work to be done, rationally and quietly and with self-control.

With regard to quiet hours for study at home, it has proved in practice somewhat difficult to reconcile the perfectly just claims of the freshman enjoying overflowing vitality and lighter work, with those of the graduate student who is in college for serious study before all else and has but little time or strength to spend on the social life about her. For next year, therefore, with the concurrence of the Sage College Committee, it has been decided to try the experiment of setting apart a wing of the building—the two corridors immediately above the botanical lecture room in the south wing—as rooms for graduate students and for other students only upon the recommendation of the Warden. Considering the special advantage offered to women graduate students at Cornell of pursuing graduate work while living in residence at the University, there is every reason to hope, if the life in Sage College be arranged with a view to their comfort and welfare, that a great graduate school should in time come to exist here. The setting apart of rooms for them is at least a step in this direction.

A somewhat close connection with the alumnæ has been maintained this year, through several visits made to Sage College by the chairman of the alumnæ, and several gifts from her, and through an opportunity given the Warden by the alumnæ to attend their annual luncheon, and to give some account of the present conditions of life in Sage College.

Gifts from the alumnæ also helped towards the subscription in the name of Sage College to the American Women's Endowed Table at the Zoological Station at Naples, founded this year. The main part of the annual subscription of fifty dollars was made this first year by two friends of Sage College. The subscription is regarded as a step towards bringing Sage College somewhat more prominently before the public as standing for the cause of women's education generally, and not alone at Cornell.

SOCIAL LIFE

During this year for the first time the University military hops have been run on the plan of strictly subscription dances, and the women as well as the men of the University have been urged to become subscribers. The plan has worked admirably. An opportunity has thus been given to both the young men and young women who care for dancing to become acquainted with each other, and to meet thus several times during the college year on an equal footing as fellow-students, like members of one social club.

Of the slighter social entertainments not including the whole body of students, many have this year been held in the Sage College gymnasium. The women students are deliberately encouraged to do their entertaining beneath the roof of Sage College itself, rather than in the halls that may be rented for the purpose in town. The privilege has, however, on account of the noise and confusion that necessarily accompanies any entertainment, been this year rather strictly limited to Friday night only. The women dance informally in the gymnasium every evening immediately after dinner.

The Dramatic Club has given this winter several plays in the botanical lecture room, to which only women were admitted. Aside from these entertainments, the chief social life of the women is dependent upon the fraternities and the literary clubs. These societies at intervals give teas and other social entertainments. The Warden has entertained the students somewhat formally in several teas given throughout the year to graduates, seniors, and juniors in Sage, and to members of the same classes living outside of Sage. She has also entertained the newly elected body of proctors at the beginning of each term.

Quite informally, she is at home to all the women students on every Monday, Wednesday, and Friday afternoon from five until six o'clock. As business is confined to the three hours each day in which she is in her office, this hour in the afternoon affords her an opportunity to meet the students socially.

Several times this winter, ladies living in Ithaca or visiting the University have sung or played for the students for an hour or so on Sunday evening. This is a pleasure warmly appreciated by the students, that will, it is hoped, be enjoyed still more frequently another year. It would be well, too, to use the drawing room as a hall in which to hold at intervals small loan art exhibitions. Any such opportunity to acquaint themselves with the best in music or art is of incalculable value to the students.

The only two large receptions given this year were the receptions in the autumn by the students to the Warden, which was held in the gymnasium, and the reception with music given in February in the newly decorated drawing room. At both of these receptions the guests were the Trustees and the Faculty and their families.

It would be a very great advantage for the University at large to have more frequently some such opportunity for meeting socially; yet these receptions to so many (between 350 and 400) are a heavy matter financially for the students alone to carry. It is therefore earnestly recommended that an appropriation be made for such social entertainment, perhaps once each term, of University officers and their families in Sage College, and that receptions of this kind be made an inherent part of the University life. Opportunities for social intercourse between Faculty and students are, from the students' point of view, the greatest social need of the University. Such opportunities exist in other large colleges and universities almost without exception, and are among the very chief means of developing that *esprit de corps*, that personal devotion and loyalty to the college which is its greatest hold on its alumni.

The drawing room of Sage College is now fitted out as a room worthy to be the centre of its social life. With the first appropriation made for the purpose by the Trustees during the first term, the room was completely redecorated, the windows and doors were hung with new curtains, the furniture was restained and re-upholstered, a window seat was built in the bay window, and a large table made for the centre of the room. With a second appropriation added in the spring term, three heavy Wilton rugs have been laid, and we are awaiting the new electric fixtures. A few good photographs have been hung on the walls, a large cabinet and a cast, the gifts of friends, have been put in place, and a portrait of the founder has been hung in the central place on the walls of the room.

What is next needed is the redecoration of the dining room along similar lines. The results of the work done on the drawing room have proved that no money can be better spent, at once for the pleasure and immediate advantage of the students, than money invested in giving them beautiful and refining surroundings. Very much has been done, and much yet remains to do, before the hall is calculated to exert only the best and highest influence on the students within it.

PHYSICAL WELFARE

We are exceedingly fortunate this year in having to report no cases of very serious illness. Although the room reserved in Sage College for the purpose has been more or less constantly in demand in cases of slight indisposition, only once has a student had to be removed to the hospital in town, and then only for a few days. The infirmary next year will do away with the necessity of reserving even this one room in Sage College.

Excuses for absence from class on account of illness were formerly given out by the Principal of Sage College. On the recommendation of the Warden and at the request of the instructor in physical culture in Sage College, such excuses are now given out from the office and over the signature of the instructor. She is the person in the nature of the case best qualified to judge of the physical condition of the students, many of whom are under her immediate care. The physical examination made of each student entering the gymnasium by the instructor and a practising physician has this year been attended with exceedingly good results. It is earnestly to be desired that another year this advantage be extended to all, and that it be made possible for any student to consult a practising physician during one hour a week free of charge. Such an arrangement in other colleges has been attended with the most beneficial results, experiment having proved that students can thus be reached and helped who would see a physician in no other way.

The students' health is also furthered by the actual exercise taken in the gymnasium and in their various sports,—tennis, rowing, basket ball. The latter game had until this year been played in the gymnasium. In the autumn one match game with a team from the Cortland Normal School was played in the Sage gymnasium. The students do not incline and are not encouraged to play games elsewhere. Students rooming in the annex immediately over the gymnasium were so much disturbed by the noise that the game was for some months this year suspended altogether. Later in the spring term, with the permission of the occupants of the rooms above, it was resumed in the gymnasium, and for the past few weeks of that term has been played for the first time out of doors, in a field adjoining the University grounds.

Concerning all sports of the women not required of students as work in physical training, the Sage College Committee, in January of this year reached the decision : "That the same policy should be followed with regard to women as is now practiced with the men : that is to say, gymnasiums and necessary equipment are furnished for the physical training which the faculties require of their students ; but the University undertakes no responsibility for any other sports." This decision applies to tennis, rowing, basket ball, bicycling, golf, etc. The women students are now engaged in collecting money for a boathouse in which to keep the boat they already own and the rowing machines they so much need. Meanwhile, work on machines has been stopped and students beginning to row practice in the boat itself.

GOVERNMENT

The government has this year been in certain respects freer than hitherto. The statutes regarding Sage College are somewhat minute in their provisions. Some of them were in the autumn temporarily suspended by the Sage College Committee; all of them have since been allowed to lapse, and no longer appear upon the blanks to be signed by a student on engaging a room.

There have been this year a few definite regulations, for example, against going on the lake unless permission in writing be obtained from the student's parents; concerning registering in the Warden's office before going on the lake at all; registering when expecting to be out after ten at night; explaining fully any failure to register, etc., etc.

Quiet after ten has been secured through proctors,—students elected from each separate corridor (fourteen in all) who are responsible for the carrying out of the regulations on their corridors, and serve as representatives, a sort of channel of communication between the Warden and the students. Proctors are elected or re-elected each term. While there have been, of course, occasional difficulties and disturbances, the hall has on the whole been well ordered and quiet after ten.

Speaking generally, it may be said concerning the conduct of the students during the past year that there has been no real difficulty to deal with or combat. There has been of course carelessness, an abundance of it; there have been injudicious things done, but there has been apparent no spirit of defiance for defiance's sake, no breaking of rules because they are rules.

Self-government is the system towards which we are tending, and which we do not doubt will eventually be welcomed, as on the whole the best system of government for college students.

Respectfully submitted,

LOUISE SHEFFIELD BROWNELL,

Warden of Sage College.

APPENDIX XI

REPORT OF THE REGISTRAR

To the President of the University:

SIR:—I have the honor to submit herewith my annual report as Registrar of the University. The reorganization of the University into separate colleges and faculties at the beginning of the year 1896-97 made some changes; but the office has gradually adapted itself to them, and during the present year the work under those changes has been very satisfactory.

ADMISSION TO ADVANCED STANDING

The credentials of students entering from other colleges and universities have been adjusted by the secretary of the Faculty concerned except for entrance to the academic department. The office has assumed the work in that department, and when the elective system, begun in 1897, has become fully realized in 1901 it will greatly facilitate the passage from other institutions to Cornell by reducing to a minimum the specific subjects required here for the A.B. degree. Students who have been attracted to Cornell will now be able to make the change to the academic department and devote themselves to special fields unhampered by arrears of required work.

In the following lists should properly be included a number of cases of special students who, coming from other colleges, would have been eligible for admission to advanced standing. Such students however preferred to be under the special direction of some one professor with whom they desired to study.

The number of students admitted to advanced standing as candidates for the first degree during the past twelve years is, as nearly as may be ascertained, as follows :

Year	No. of Cases	Fresh.	Soph.	Jun.	Sen.	Arts.	Phil.	Lett.	Sci.	Agr.	Arch.
1886–87	50	22	9	15	4	2	8	1	4	1	4
1887–88	37	9	13	8	7	6	4	1	1	-	-
1888–89	64	34	9	12	9	5	-	6	5	2	2
1889–90	50	17	13	13	7	4	5	6	3	2	1
1890–91	69	13	29	15	12	8	8	2	4	1	-
1891–92	90	21	25	22	22	7	9	2	5	2	2
1892–93	87	30	30	12	15	6	6	1	8	-	6
1893–94	98	31	39	21	7	5	6	5	8	-	6
1894–95	71	21	24	13	13	4	2	3	3	2	3
1895–96	85	25	27	17	16	5	11	4	7	3	3
1896–97	100	36	23	23	18	10	4	2	4	3	3
1897–98	108	56	25	15	12	11	6	-	7	9	2

Year	Civ. Eng.	Mech. Eng.	El. Eng.	Med. Pr.	Opt.	Law*	Vet.
1886–87	6	14	4	-	6	-	-
1887–88	11	8	2	-	4	-	-
1888–89	12	13	8	1	8	-	-
1889–90	2	14	11	-	2	-	-
1890–91	14	12	16	-	2	-	-
1891–92	10	24	28	-	1	-	-
1892–93	11	22	22	1	4	-	-
1893–94	6	24	32	1	5	-	-
1894–95	6	22	22	-	4	-	-
1895–96	9	16	17	-	10	-	-
1896–97	11	20	22	1	3	12	5
1897–98	15	28	13	-	1	15	1

.*No data prior to 1896–97.

In 1888–89 one student was admitted to the course in Chemistry and one to the course in Pharmacy. These courses have been abolished. Other courses have been abolished, but students are still entering the upper classes of the courses.

The distribution of students admitted to advanced standing among the 212 institutions from which such applicants have come is indicated in the following table :

Acadia	3
Adelbert	2
Alabama	2
Alabama Polytechnic Inst.	1
Alfred	2
Allegheny	3
Alma	1
Altoona (Germany)	1
Amherst	1
Armour Inst.	2
Arizona	1
Astrachansky	1
Austin	1
Baldwin Univ.	1
Baltimore City	4
Bates	2
Baylor	1
Beloit	3
Berlin Koenigl. Tech. Hoch-Sch.	2
Brooklyn Polytechnic	16
Brown	8
Bryn Mawr	2
Buchtel	5
Bucknell	5
Buffalo Univ.	1
California	3
Canisius	1
Carleton	2
Case	18
Centenary	3
Charleston	1
Chicago	5
Christian Brothers	1
Cincinnati	9
Clemson	1
Claflin Univ.	1
Coe	2
Colgate	3
Colorado Coll.	1
Colorado Univ.	1
Columbia	15
Columbian	3
Dakota	1
Dalhousie	3
Dartmouth	3
De la Salle Inst.	1
Denison	1
DePauw	6
Deseret	1
De Veaux	2
Dickinson	4
Doshisha (Japan)	1
Duquesne	1
Earlham	1
Elmira	2
Emory	1
Franklin & Marshall	1
Freiburg	1
Furman	2
Grove City	2
Georgetown	7
Georgia	4
Georgia Technology	3
Granville Female	1
Hamilton	4
Hampden Sidney	2
Hampton	1
Harvard	9
Harvard Annex	2
Haverford	2
Hillsdale	4
Hiram	2
Hobart	7
Holy Cross	2
Howard Univ.	2
Illinois	12
Illinois State Normal	1
Illinois Wesleyan	2
Indiana	9
Iowa Agr.	12
Iowa Coll.	3
Iowa State Univ.	4
Johns Hopkins	4
Kansas State	3
Kenyon	3
Kentucky State	1
Kentucky Wesleyan	1
Knox	8
Lafayette	6
Lake Forest	4
Lebanon Valley	1
Leesville	1
Lehigh	35
Lima (South America)	1
Louisiana State	3
Maine State	4

Marietta	1
Marquette	1
Massachusetts Agr.	7
Massachusetts Inst. of Tech.	18
Macallister	1
McGill	5
Miami	1
Michigan	21
Michigan Agr.	13
Michigan Mining School	1
Miller Manual Training	1
Minnesota	7
Mississippi Agr.	1
Missouri Sch. of Mines	1
Missouri State	4
Montana	1
Mount Allison	1
Mount Holyoke	2
Mount Union	1
Nebraska	2
New Brunswick	1
New York City Normal	2
New York City Veterinary	3
New York, Coll. of the City of	37
New York Coll. of Pharmacy	1
New York, Univ. of	1
North Carolina	2
North Carolina Agr.	3
North Dakota Univ.	1
Northwestern	5
Notre Dame	3
Oberlin	15
Ohio	1
Ohio State	21
Ohio Normal	3
Ohio Wesleyan	8
Oklahoma Agr.	1
Olivet	3
Ontario Veterinary	2
Oregon	1
Ottawa (Kansas)	1
Pacific Univ.	1
Pennsylvania Military Coll.	6
Pennsylvania State	15
Pennsylvania Univ.	11
Pennsylvania, Western Univ.	4
Portland Univ.	1
Princeton	6
Purdue	13
Queens Univ.	1
Radcliffe	1
Rensselaer Poly. Inst.	9
Reykjavik (Iceland)	1
Richmond	3
Ripon	1
Rochester	8
Rose Poly. Inst.	8
Rutgers	4
St. John's (Baltimore)	2
St. John's (Fordham)	3
St. Louis (Costa Rica)	1
St. Lawrence Univ.	2
St. Petersburg	1
Senmon Gakko (Tokio, Japan)	1
Smith	1
South Carolina	4
Stanford	11
Stevens Inst. of Tech.	32
Swarthmore	17
Sydney Univ.	1
Syracuse	7
Tennessee	2
Texas	4
Texas Agricultural	3
Toronto	1
Trinity, Conn.	1
Trinity, N. C.	1
Tufts	1
Tulane	7
Union	8
Union (Tokio, Japan)	1
U. S. Military Academy	5
U. S. Naval Academy	2
U. S. Grant Univ.	1
University of Washington	1
Upper Iowa	2
Utah	3
Vanderbilt	2
Vassar	2
Vermont Univ.	1
Victoria	1
Vincennes	1
Virginia Agr. and Mech.	1
Virginia Mil. Inst.	3
Virginia Poly. Inst	1
Virginia Univ.	2
Wabash	1
Washington and Jefferson	2
Washington and Lee Univ.	2
Washington Coll.	2
Washington Univ.	13
Waynesburg	1
Wellesley	10
Wells	2
Wesleyan	5
Western Maryland	2
Western Normal	1
West Virginia Univ.	1
Wheaton	2
Wilberforce Univ.	1
Wilmington	1
Williams	9
Wisconsin	14
Wittenburg	2
Wooster	18
Worcester Poly. Inst.	16
Yale	24

ADMISSION ON CERTIFICATE

The Registrar is secretary of the University Faculty Committee on Admission by Certificate and also has charge of the credentials of those entering by Regents' diplomas and by examinations.

During the last seven years the number of applicants admitted by certificate, by Regents' diplomas, and by examinations, are as follows :

	1891–92	92–93	93–94	94–95	95–96	96–97	97–98
Certificate	171	195	209	156	164	202	193
Regents	118	120	125	118	119	131	140
Examination	57	63	55	23	28	28	25
	346	378	389	297	311	361	368

The discrepancy in numbers in the freshman class, if compared with those given in the Register, is due to students being registered back and to students admitted from colleges and universities partly to advanced standing.

It should be noted that the number entering entirely by examination is becoming smaller and that the total is again approaching the large attendance during the years 1892–94. The preparatory schools are now better acquainted with our entrance requirements. The Regents' diploma now admits to the College of Law, and under certain conditions relieves all students from taking an entrance examination in English. The failure of several students to pass the entrance examinations before completing the high school course has influenced others to complete their course in school and enter the University by certificate.

STUDENTS

The following table gives the number of students in the various courses since 1891 :

	1891–92	1892–93	1893–94	1894–95	1895–96	1896–97	1897–98
Grad. Dept.	177	170	231	188	145	161	166
Arts	142	141	138	133	146	170	
Philosophy	100	110	121	136	153	155	
Science	82	89	89	115	144	159	
Letters	94	82	85	65	50	27	
Opt. and Sp.	122	137	126	132	139	170	
Med. Prep.	12	11	5	6	4	8—	624*
Law	122	176	197	191	207	239	246
Agriculture	22	22	25	24	30	34	84
Veterinary	---	---	---	---	---	11	16
Architecture	68	78	97	76	67	51	53
Civil Eng.	139	129	116	122	121	150	179
Mech. Eng.	251	295	239	212	201	230	
Elect. Eng.	250	260	232	289	295	243—	467
Total in Univ.	1538	1700	1801	1689	1702	1808	1835

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* Total number in the academic department.

The Courses in Arts, Philosophy, Science, Letters, and Medical Preparatory are now all under the jurisdiction of the Faculty of Arts and Sciences, and the total is given in the 1897–98 column. Previous to 1897 optional and special students were separately tabulated. Now these are distributed among the Faculties to which they belong.

The short winter course in Agriculture was attended by 93 students; the general course Summer School, 1898, by 180 students; the Summer School of Law by 23 students.

RESIDENCE

The following table gives the residence of students entering the University, 1897–98:

	NUMBER				PERCENTAGES		
	Total	New York State	U. S. except New York	Foreign Countries	New York State	U. S. except New York	Foreign Countries
Arts and Sciences	164	116	47	1	70.7	28.7	.6
Agriculture	30	15	13	2	50.0	43.3	.7
Architecture	11	9	2	-	81.8	18.2	--
Civil Engineering	79	44	33	2	55.8	41.7	2.5
Mechanical Eng.	158	76	79	3	48.1	50.0	1.9
Medical Preparatory	7	6	1	-	85.7	14.3	--
Veterinary	7	5	2	-	71.4	28.6	--
Specials	68	37	26	5	54.4	38.2	7.4
Law	93	74	19	-	79.6	20.4	--
Undergraduates	617	382	222	13	62.0	35.9	2.1
Graduates	40	7	31	2	17.5	77.5	5.0

PREPARATORY SCHOOLS, AND METHOD OF ADMISSION OF STUDENTS ENTERING THE UNIVERSITY IN 1897–98

A comparison of the following table with that for 1896–97 will show a gain of 25 students from private schools and a gain of 46 from public schools, while percentages for the different methods have not materially changed. There has been an increase of 21 in those entering by Regents' diploma and an increase of 29 in those entering by school certificate. It should be noted that the methods of admission on certificate and on Regents' diploma are quite similar. The one requires a diploma from the school and the other a diploma from the University of the State of New York.

In 1895–96 there were 37 specials admitted for the first time, in 1896–97 there were 69, and in 1897–98 there were 68.

TABLE SHOWING THE NUMBER AND PERCENTAGE OF THE UNDERGRADUATE STUDENTS ENTERING CORNELL IN 1897–98 WHO CAME FROM PUBLIC AND PRIVATE SCHOOLS,[1] ALSO THE NUMBERS AND PERCENTAGE WHO ENTERED BY EACH OF THE VARIOUS METHODS

ENTERING FROM SCHOOLS	NUMBER		PERCENTAGE		METHOD OF ENTRANCE—NUMBER						METHOD OF ENTRANCE—PERCENTAGE					
	From Public Schools	From Private Schools	From Public Schools	From Private Schools	On Regents' Diploma	On School Certificate	By Examination	On College Certificate[2]	On Recommendation as Specials	Students entering the College of Law, excepting those from colleges	On Regents' Diploma	On School Certificate	By Examination	On College Certificate	On Recommendation as Specials	Students entering the College of Law, excepting those from colleges
In New York State	319	66	82.9	17.1	140	102	19	19	38	66	36.3	26.6	4.8	4.8	10.1	17.4
In U. S. outside of New York	174	51	77.4	22.6	------	90	6	91	28	10	------	40.0	2.7	40.5	12.4	4.4
Outside U. S.	5	2	71.4	28.6	------	1	------	4	2	------	------	14.3	------	57.1	28.6	------
Total	498	119	80.17	19.3	140	193	25	114	68	76	22.6	31.3	4.1	18.5	11.2	2.3

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[1] The distinction between public and private schools is of necessity roughly drawn. Colleges are classed as public, though in many cases they are quasi-private; the number entering from other colleges thus classed among the public schools is 114.

[2] Includes also matriculants in the College of Law who enter from a college.

COMPARISON OF THE AGES OF FRESHMEN AT ENTRANCE FOR THE YEARS 1895–96, 1896–97, AND 1897–98

COURSES		NUMBER ADMITTED			MEDIAN AGE						AVERAGE AGE					
					1895–96		1896–97		1897–98		1895–96		1896–97		1897–98	
		1895–96	1896–97	1897–98	Yrs.	Mos.	Yrs.	Mos.	Yrs.	Mos.	Yrs.	Mos.	Yrs.	Mos.	Yrs.	Mos.
Totals		548	632	617	19	11	19	8	19	7	20	8⅖	20	6⅘	20	5⅓
Arts and Sciences	M.	121	108	113	19	-----	19	1	19	2	19	3⅘	19	4½	19	6⅓
(General Courses)	W.	51	55	51	19	11	19	-----	20	-----	20	4	19	4	21	6⅗
Agriculture		9	10	30	21	5	20	1	20	6	22	½	20	5	20	10
Architecture	M.	14	13	9	19	5	19	5	19	4	20	¾	19	11	19	6
	W.	--------	2	2	----	-----	21	2	18	7	----	-----	21	2	18	7
Civil Engineering		44	70	79	19	6	19	5	19	8	19	6$\frac{3}{7}$	19	11	20	-----
Mechanical Engineering		66	81	158	19	6	19	1	19	2½	20	⅓	19	2⅗	19	6
Electrical Engineering		69	65		19	7	19	3			19	10⅗	19	7½		
Medical Preparatory	M.	1	5	6	17	11	18	4	19	8½	17	11	18	6	19	9⅓
	W.	--------	2	1	----	-----	19	5	17	11	----	-----	19	5	17	11
Veterinary		--------	9	7	----	-----	20	5	21	3	----	-----	22	8	21	6
Optional	M.	17	10	--------	19	4	20	1	----	-----	19	6¾	20	8½	-----	-----
	W.	10	9	--------	19	7	22	7	----	-----	22	1	22	10	-----	-----
Special	M.	26	54	47	23	8	22	1	22	-----	24	11⅔	22	9½	23	2
	W.	21	28	21	26	1	25	1	23	8	27	6⅓	27	10⅓	25	8
Law	M.	98	109	92	21	4	20	4	19	9	21	6¾	21	3⅛	20	5
	W.	1	2	1	22	-----	25	9	19	7	22	-----	25	9	19	7

AGE OF FRESHMEN AT ENTRANCE, CLASSIFIED BY COURSE AND SEX, 1897–98

COURSES		16–17	17–18	18–19	19–20	20–21	21–22	22–23	23–24	24–25	25–26	26–27	27–28	28–29	29–30	30–	Total	Median Age		Average Age	
																		Years	Mos.	Years	Mos.
Arts and Sciences	M.	7	16	26	32	10	10	4	3	2	1	---	1	---	---	1	113	19	2	19	6⅓
	W.	---	5	7	13	5	6	4	1	2	1	---	3	---	1	3	51	20	------	21	6⅔
Agriculture		1	2	5	4	6	3	4	---	2	2	---	---	---	---	1	30	20	6	20	10
Architecture	M.	---	2	---	4	1	2	---	---	---	---	---	---	---	---	---	9	19	4	19	6
	W.	---	---	2	---	---	---	---	---	---	---	---	---	---	---	---	2	18	7	18	7
Civil Engineering		1	5	14	23	17	9	4	3	1	1	---	1	---	---	---	79	19	8	20	------
Mechanical Engineering		6	22	36	38	24	18	5	6	2	---	1	---	---	---	---	158	19	2½	19	6
Medical Preparatory	M.	---	1	1	1	2	---	1	---	---	---	---	---	---	---	---	6	19	8½	19	9⅓
	W.	---	1	---	---	---	---	---	---	---	---	---	---	---	---	---	1	17	11	17	11
Veterinary		---	---	---	1	---	5	---	1	---	---	---	---	---	---	---	7	21	3	21	6
Special	M.	---	1	7	1	7	7	6	2	4	1	2	1	2	2	4	47	22	------	23	2
	W.	---	---	---	---	1	3	5	2	---	2	---	2	2	1	3	21	23	8	25	8
Law	M.	3	5	17	26	16	7	7	1	1	4	2	2	---	---	1	92	19	9	20	5
	W.	---	---	---	1	---	---	---	---	---	---	---	---	---	---	---	1	19	7	19	7
Total		18	60	115	144	89	70	40	19	14	12	5	10	4	4	13	617	19	7	20	5½

The Report of the President for 1895–96 gave only the average age, but the Report for 1897 gave both the average and median age. For the method of determining the median age see my report for 1897–98. These tables give the ages, median and average, for the last three years. They show that on the whole the age is decreasing, but very slightly. The decrease is in students in Architecture, Medical Preparatory, Law, and Specials, while it is increasing in Arts and Sciences, Agriculture, Civil, Mechanical and Electrical Engineering, etc.

TABLE SHOWING BY YEARS THE NUMBER AND KINDS OF DEGREES GRANTED BY CORNELL UNIVERSITY

FIRST DEGREES

	1869	1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	Total
Bachelors of Arts	8	8	7	4	17	4	8	8	5	9	7	12	18	13	10	8	6	7	8	14	11	20	23	35	39	26	29	31	39	42	476
Bachelors of Literature					3	4		1	2	3	7	5	5	8	8		5	1													52
Bachelors of Philosophy*		7	9	9	6	3	5	3	8	2		4	4	5	7	9	7	13	17	15	18	13	17	26	26	24	25	43	49	44	418
Bachelors of Letters																			17	27	19	39	31	32	30	13	20	12	16	3	259
Bachelors of Science†		8	17	38	45	30	19	25	25	24	33	40	35	29	21	31	26	36	8	8	13	17	14	23	26	21	23	23	34	57	749
Bachelors of Science in Chemistry																			1	2	1	2	3								9
Bachelors of Sci. in Natural Hist.																				1		1	2								4
Bachelors of Science in Agriculture																		1		7	6	7	11	8	3	4	4	5			56
Bachelors of Sci. in Architecture																		6	4	11	6	19	8	6	8	13	18	19			118
Bachelors of Architecture					1	6	4	6	7	2	4	3		1	2	1	2												8	9	56
Bachelors of Agriculture					2	2	1	1	2	1		3	8	4	2	2	2														30
Bachelors of the Sci. of Agriculture																													8	9	17
Bachelors of Veterinary Science			1	1							1						1														4
Doctors of Veterinary Medicine																													3	4	7
Graduate in Pharmacy																					1										1
Pharmaceutical Chemists																						2									2
Bachelors of Civil Engineering			7	16	18	15	8	12	15	14	10	7	9	4	10	7	9														161
Civil Engineers																		10	17	20	14	15	24	30	25	25	29	23	24	15	271
Civil Eng. (in exchange for B.C.E.)																			1	1	1	21					1				25
Bachelors of Mechanical Engineer'g					3	1	5	6	7	12	5	4	3		5	3	3														57
Mechanical Engineers‡																		8	19	22	32	54	52	85	93	81	87	110	125	87	855
Bachelors of Laws																				9	36	32	44	37	62	65	76	61	81	105	608
Total First Degrees	**8**	**23**	**41**	**68**	**95**	**65**	**50**	**62**	**71**	**67**	**67**	**78**	**82**	**64**	**65**	**61**	**61**	**82**	**92**	**137**	**158**	**242**	**229**	**282**	**312**	**272**	**312**	**327**	**387**	**375**	**4,235**
*Ph.B. in History and Political Sci.															2	6	3	4		3	2	1	4	5	1	3	1	3	2		40
†B.S. in Chemistry					4	1	1																								6
in Chemistry and Physics								4		3		3			1	1	1														13
in Natural History					1	2	2	1	3	2	1	4	2	4	1	1	3	4													31
in Science and Letters									1	18	31	31	29	22	18	27	18	28													223
in (Physical) Science										1			3	1	1	2		1													9
in Mathematics											1	1	1	1				1													5
in Civil Engineering												1		1																	2
in Electrical Engineering																	4	2													6
‡M.E. in Electrical Engineering																		3	7	8	19	28	28	44	46	43	51	69	69	46	461

TABLE SHOWING BY YEARS THE NUMBER AND KINDS OF DEGREES GRANTED BY CORNELL UNIVERSITY

ADVANCED DEGREES

	1869	1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	Total
Architect								1																							1
Civil Engineers		1			1	4		2	2	2	2	1	2		2	1															20
Mechanical Engineer														1																	1
Masters of Arts					1			4	2	1				1	2	2	2	3	1	3	1	8	6	6	4	8	2	1	10	10	78
Masters of Philosophy																						1		2		3	1	3			10
Masters of Letters																								1	3	2	3				9
Masters of Science				1		3	3	2	3		1	2	1	1	2	1	5	3	3	3	6	7	5	5	4	9	5	8		1	84
Masters of Science in Agriculture																							1	2	2		1	3	5	5	19
Masters of Science in Architecture																							1			1	1	1	1		5
Masters of Civil Engineering																		1		1		1	2		2	8	4		1	3	23
Masters of Mechanical Engineer'g																		1		2	1	6	3	6	14	16	8	15	6	2	80
Masters of Laws																						7	5	3	11	10	8	4	7	5	60
Doctor of Veterinary Medicine								1																							1
Doctors of Science																		2							2	3	6	3	3		19
Doctors of Philosophy				1	1	1			1		1	1					3	1		3	1	2	3	8	4	16	13	14	11	23	108
Doctors of Laws (Honorary)																		2													2
Total Advanced Degrees		1		2	3	8	3	10	8	3	4	4	3	3	6	4	10	13	4	12	9	32	26	33	46	76	52	52	44	49	520
Grand Total	8	24	41	70	98	73	53	72	79	70	71	82	85	67	71	65	71	95	96	149	167	274	255	315	358	348	364	379	431	424	4,755

The above tables give the number admitted to graduation at the 1898 commencement as well as those of former years. The discrepancy between this table and the one given in the 1896-97 report is due to a careful investigation while compiling data for the third Ten Year Book. Several degrees had been conferred and not recorded. Care has been taken to discriminate between closely allied degrees, but such have been grouped so as to show at a glance the number in each department.

UNSATISFACTORY WORK

The function of the Doubtful Case Committee of the former General Faculty has been performed by a similar committee from each of the Faculties.

During the year 1897–98 the following action has been taken by the different Doubtful Case Committees at the close of the respective terms:

Date	Action	Arts	Law	Agr.	Vet.	Arch.	C.E.	M.E. & E.E.
December	Dropped	12	20	6	0	1	9	10
	Warned	12	0	3	0	1	13	32
March	Dropped	4	2	5	0	1	4	7
	Warned	3	1	2	0	4	7	27
June	Dropped	2	3	2	0	2	6	6
	Warned	2	5	0	0	0	4	15

PETITIONS

The usual form of petition has been continued by the several Faculties. The Faculties of Agriculture, Civil Engineering, Veterinary Medicine, and Law have filed the petitions in the offices of these Colleges and have notified the Registrar of the action taken; while the Arts and Sciences and Mechanical Engineering Faculties have returned the petitions to this office and the office has notified the students by mail. The number of petitions acted upon during the last year by the various Faculties is as follows:

	Grad.	Arts	Law	Agr.	Vet.	Arch.	C.E.	M.E. & E.E.
1896–97	11	1035	130	121	1	61	302	990
1897–98	10	902	244	163	2	66	257	865

LATE REGISTRATION

Permits to register after registration day have been granted by the Deans of the Faculties concerned. The late registration in January, 1897, was exceptionally large owing to the fact that registration day was on Monday.

	Term	Grad.	Arts	Law	Agr.	Vet.	Arch.	C.E.	M.E. & E.E.	Total
1896–97	Fall	0	20	17	2	0	1	4	12	56
	Winter	20	118	49	4	1	6	20	68	286
	Spring	7	33	25	5	0	2	5	41	118
1897–98	Fall	0	18	8	2	0	4	4	11	47
	Winter	12	60	42	1	0	2	18	36	171
	Spring	8	43	14	3	0	3	6	40	117

Respectfully submitted,

DAVID F. HOY,

Registrar.

APPENDIX XII

REPORT OF THE LIBRARIAN

To the President of the University:

SIR:—I have the honor to submit herewith the annual report on the University library for the year 1897–98.

The lamented death of Mr. Sage, the steadfast friend and generous benefactor to whom the library is indebted for its beautiful home and rich endowment, is the one event which darkens the annals of an otherwise prosperous year. Mr. Sage's noble gift of our fireproof building and its endowment fund for the purchase of books has made secure the steady growth and development of the library, and will cause his name ever to be held in grateful remembrance by all who enjoy the facilities for study and research provided by his benefactions.

The following table shows the additions made, during the year ending July 31st, 1898, to the several collections, and the total present extent of the University library:

	ADDITIONS, 1897–98		PRESENT EXTENT	
	Volumes	Pamphlets	Volumes	Pamphlets
General Library	11,386	1,500	183,804	35,000
Law Library	1,460	----------	26,504	----------
Flower Veterinary Library	970	----------	970	----------
Totals	13,816	1,500	211,278	35,000

The Flower veterinary library, established in 1897, is the gift of Ex-Governor Flower to Cornell University, for the use of the State Veterinary College at Cornell, and is therefore properly included in the collections composing the University library. It is deposited in the State Veterinary College, and usefully supplements the working library of the College purchased from state funds and not included in the University library statistics.

Of the accessions to the general library, numbering this year 11,386 volumes, 2,790 volumes were received as gifts, and 194 volumes were additions to the various seminary libraries. The seminary libraries now contain 2,944 volumes and these are included in the estimate of the general library given above.

The more important gifts of the year include 575 volumes of pedagogical and miscellaneous works presented by Professor S. G. Williams; 372 volumes added to the Dante collection by Willard Fiske; and 273 volumes of historical works, the gift of Ex-President White, either directly, or as purchases from the income accruing from the sale of his Warfare of Science. To the Duc de Loubat the library is indebted for a copy of the costly Galerie Américaine du Musée d'Ethnographie du Trocadéro, and a facsimile of the noted Manoscritto Messicano Borgiano, and to Ex-Mayor W. L. Strong for a set of the recently published Records of New Amsterdam. To yourself, and to Professors Burr, Caldwell, Crane, Hart, and Stephens, the library is also indebted for many valuable gifts. Important additions to the library have been made by Dr. S. A. Green, T. W. Koch, and Theodore Stanton, '76. From the national and state governments the usual supply of public documents has been received, and the British and Canadian Patent Offices continue to present us their valuable publications. For the gifts here mentioned, and for all the numerous minor gifts received, due acknowledgment has been made to the respective donors.

The purchases of the year, from the income of the Sage endowment fund, include many costly and important works, such as Conze's Attischen Bas-reliefs, DeRossi's Roma Sotterranea Cristiana, Migne's Patrologia Graeca, the Colleccion de libros Españoles raros, the Colleccion de documentos inéditos para la historia de España, the Colleccion de documentos inéditos relativos a las posessiones Españolas, the Memoirs, maps and sections of the Geological Survey of England and Wales, the Shelley Society's publications, and sets of the Auk, the Bankers' Magazine, the Calcutta Review, the Gentleman's Magazine, the International Review, the Jahrbücher der Literatur, the Journal Asiatique, the Historische und Politische Blätter, and the Atti della Accademia dei Lincei; and several important sets have been completed by the purchase of back volumes, among them the Botanische Zeitung, Fortschritte der Physik, Göttingische Gelehrte Anzeigen, Illustrirte Zeitung, and the Ithaca Journal from 1823.

Dr. A. C. White, assistant librarian in charge of the classification, and Miss M. Fowler, in charge of the catalogue, report that the additions of the year have all been classified and catalogued with promptness and regularity. The new cases for the card catalogue were in readiness at the opening of the year, and enable readers to consult the catalogue with much greater facility and convenience. The work on the Dante catalogue has been carried on with diligence and zeal by Mr. Koch, and Part I, containing the works of Dante, was published in the spring. The reception this part has met with from scholars and the press is very gratifying, and its publication will undoubtedly add greatly to the reputation of the University. Part II, containing the works about Dante, is now in the hands of the printer, and the work is being pushed forward as rapidly as possible.

From the White historical library, Professor Burr, the Librarian, makes the following report: The event most worthy of note in the history of the President White library during the past year has been the consummation of Mr. White's gift of the income of The Warfare of Science. He had generously offered the Librarian of the President White library, for the uses of the library, his entire profits from the sale of that work on condition of the Librarian's aid in seeing the book through the press. The condition was gladly accepted, the proper contract was made with the publishers (the Messrs. Appleton), and on August 1st, 1897, the Librarian received from them as the fruit of the first year's sales of The Warfare of Science, the sum of $1,475. It is the wish both of Mr. White and of the Librarian that this fund should be largely used for the building up of the library in the fields dealt with by The Warfare of Science itself, and in those kindred fields of the history of civilization which fall less directly within the scope of University instruction and so of the ordinary library appropriations. In view of the unlikelihood that so large an income could be realized from the book annually as during the first year, less than half the first year's receipts have thus far been expended. During the year the marking of the volumes of the library to presses and shelves has been entirely completed. This, which was necessitated by the publication of the portion Miscellanea of the President White catalogue, has made such demands on the Librarian's time as somewhat to delay the work on the concluding division of the catalogue—a task which the waning of the fund set aside for this purpose will require him to complete single-handed.

Mr. W. H. Austin, assistant librarian in charge of the reference library, reports that the library has been open 306 days during the year, and 163 evenings. From February seventh, the hour for closing in the evening has been eleven o'clock, and the record of books drawn for reading room use after nine o'clock as compared with the number drawn during this hour before the seventh of February shows a large increase in the use of the library between nine and ten o'clock. The following table shows the recorded use made of the various collections during the year:

REFERENCE LIBRARY AND READING ROOM

No. of volumes added permanently to the collection	163
No. of periodicals placed in periodical room	56
No. of volumes placed on the shelves for special work	94
No. of volumes given out at delivery desk for reading room use,	82,561

SEMINARY COLLECTIONS

No. of volumes deposited in the several rooms	340
No. of volumes sent to the rooms for special work	2,163

DEPARTMENT COLLECTIONS

No. of volumes deposited in the several buildings	377

CIRCULATION

No. of volumes drawn by officers and graduate students	14,591
No. of volumes drawn by undergraduates	3,528
Total recorded use	103,560

In 1892–93, the first year after the removal of the library to the new building, the total recorded use of the library was 47,686 volumes, last year, 1896–97, it was 90,993 volumes, and this year it was 103,560 volumes. As I have already pointed out, the recorded use is but a small part of the actual use made of the books by readers, and, so far as can be judged, the increase in the use of the books in the reference library, seminary rooms, White library, and the stacks, of which no record can be kept is probably as great as in the recorded use. The total number of volumes from the general library now deposited in the various seminary rooms is 5,218, and the number of volumes similarly deposited in the department collections, outside of the library building, is 6,787.

The number of cards of admission to the stacks granted to students for the consultation of books at the shelves is less than in the last two years as is shown by the following table:

SUBJECTS	1892–3	1893–4	1894–5	1895–6	1896–7	1897–8
History and Political Science,	40	43	31	44	60	36
Literature and Philology	21	22	21	19	36	18
Philosophy and Education	18	10	8	22	12	14
Science and Technology	78	86	60	87	87	54
Totals	157	161	120	172	195	122

During the past year for the first time since the new classification was completed all the books in the stacks have been diligently compared with the shelf list entry, and, after all the volumes recorded as drawn out or deposited elsewhere were taken into account, it was found that 420 volumes could not be accounted for. In doing this work 2,450 volumes were found out of place, notwithstanding that several divisions of the library had been put in order one or more times previous to this inventory. Such a condition must inevitably decrease the efficiency with which the library serves its readers, and suggest the necessity of limiting the number of persons permitted to go into the book stacks to those for whom this privilege is absolutely necessary, as well as greater care in instructing those to whom permits are granted with reference to the caution necessary in replacing volumes on the shelves. A careful inspection of the various department collections has also been made which shows that, of 6,787 volumes deposited in the departments, 119 volumes could not be accounted for at the date of this report. Undoubtedly most, if not all, of these missing books will be accounted for later, but in the meantime they are inaccessible for consultation and use.

During the year just closed two important changes in the regulations of the library have been made which deserve mention in this report. In January, upon the recommendation of the University Faculty, the library council voted to extend the library hours so that the library should be open from 8 A. M. till 11 P. M., and also voted to extend the privilege of taking books from the library to all graduate students candidates for advanced degrees. This action of the council was approved by the Trustees, and the new regulations went into effect in February. The extension of the library hours was much to be desired and will tend to increase largely the usefulness of the library; but the extension of the privilege of taking books from the library is, in my opinion, likely rather to interfere with, than to increase, its usefulness. From its foundation the library has always been considered as being primarily a reference library, and it has been truly said of a university library, that if it is in any sense useful to lend books out of the library, it is far more useful, all things considered, not to lend them; consequently I deprecate earnestly any further extension of the privilege of taking books out of the library, and beg to point out that a number of the richest and most important collections which have been given to the library are the gifts of men who looked upon it as primarily and mainly a reference library, and who now earnestly desire that it may remain a reference library. In view of these facts I have deemed it prudent to place several of our special collections in the class of books which may be taken from the library only by special permission.

Since the installation of the ventilating fan there has been a notable improvement in the air of the reading rooms, but there seems to be still ground for some complaint of inadequate ventilation, more especially in the periodical room, and I recommend that a thorough inspection of the present provision for the supply of fresh air to the reading rooms be made, in order to determine what may be done to give better ventilation.

The annual record of publication by the University and its officers has been prepared, as heretofore, to appear as a supplement to the Annual Report of the President. During the winter and spring terms I gave, as announced in the Register, the usual course of lectures on bibliography.

Respectfully submitted,

GEO. WM. HARRIS,

Librarian.

APPENDIX XIII

PUBLICATIONS

By the University

Cornell University: memorial exercises in honor of Henry Williams Sage. Ithaca, N. Y., 1898. 8°. pp. 79+(1). *Port.*

Cornell University Library: Catalogue of the Dante collection presented by Willard Fiske; compiled by T. W. Koch. Pt. I. Dante's works. Ithaca, N. Y., 1898. 4°. pp. iv.+91.

Cornell studies in classical philology; edited by B. I. Wheeler, C. E. Bennett, and G. P. Bristol:

vi. Studies in Latin moods and tenses, by H. C. Elmer. [New York], 1898. 8°. pp. ix.+231.

vii. The Athenian secretaries, by W. S. Ferguson. [New York], 1898. 8°. pp. iv.+(1)+80.

viii. The five post-Kleisthenean tribes, by F. O. Bates. [New York], 1898. 8°. pp. v.+(1)+71.

The journal of physical chemistry; edited by W. D. Bancroft and J. E. Trevor. vol. i. no. 10—ii., no. 6. Oct., 1897-June, 1898. Ithaca, N. Y., 1897-98. 9 nos. 8°.

The philosophical review; edited by J. G. Schurman, J. E. Creighton, and J. Seth. vol. vi., no. 4—vii., no. 3. July, 1897-May, 1898. New York, 1897-98. 6 nos. 8°.

The physical review; a journal of experimental and theoretical physics; conducted by E. L. Nichols, E. Merritt, and F. Bedell. Vol. v.-vi. July, 1897-June, 1898. New York, 1897-98. 2v. 8°.

The College of Architecture annual, 1897-98. [Ithaca, N. Y., 1898.] 8°. *Illus.*

Transactions of the Association of Civil Engineers, Cornell University. Vol. v. 1896-97. Ithaca, N. Y., 1897. 8°.

Proceedings of the Electrical Society of Cornell University. Vol. v. 1897-98. Ithaca, N. Y., 1898. 8°.

9th, 10th annual report of the Agricultural Experiment Station, 1896-97. Albany, 1897. 2v. 8°.

Bulletin of the Agricultural Experiment Station. No. 136-149, May, 1897-June, 1898. Ithaca, N. Y., 1897-98. 14 nos. 8°. *Illus.*

Teachers' leaflets for use in the rural schools, prepared by the College of Agriculture, Cornell University. Nos. 8-11, Sept., 1897-April, 1898. Ithaca, N. Y., 1897-98. 4 nos. 8°. *Figs.*

8th annual report of the Meteorological Bureau and Weather Service of the State of New York, 1896. Albany, 1898. 8°.

New York State Weather Bureau: report. Vol. ix., no. 7—x., no. 6. July, 1897-June, 1898. Ithaca, N. Y., 1897-98. 12 nos. 4°.

"Issued in co-operation with The U. S. Department of Agriculture, Weather Bureau. Central office at Cornell University.

New York State Weather Bureau: weather-crop bulletin, in co-operation with the U. S. Department of Agriculture, Weather Bureau. Vol. ix., no. 11—x., no. 11, 3 July, 1897–27 June, 1898. *w.* [Ithaca, N. Y.], 1897–98. 25 broadsides.

By Officers

Albee, E. Hume's ethical system. (Philosophical. Review, July, 1897, vol. vi., p. 337.)

—— [Review of] British moralists; selections from writers principally of the eighteenth century, by L. A. Selby-Bigge. (*Same*, Jan., 1898, vol. vii., p. 82.)

—— [Review of] Immanuel Kant's Critique of pure reason, translated into English by F. M. Müller. (*Same*, Sept., 1897, vol. vii., p. 563.)

Atkinson, G. F. Some fungi from Alabama, collected chiefly during 1889-1892. Ithaca, N. Y., 1897. 8°. pp. (2)+50. (Cornell University Bulletin: science iii., 1.)

—— Experimental morphology. (Proceedings of the Amer. Assoc. for the Advancement of Science, 1897, vol. xlvi., p. 249.)

Address before the Botanical Section of the Assoc., Detroit, Aug., 1897.

—— Methods of teaching botany in secondary schools. (Regents' Bulletin, 29 June, 1897, no. 42, p. 206.)

Address before the University Convocation, Albany, July, 1897.

—— Report on some preliminary experiments with the Roentgen rays on plants. (Science, 7 Jan., 1898, N. S. vol. vii., p. 7.)

—— Studies and illustrations of mushrooms. I. (Cornell University Agricultural Experiment Station. Bulletin, Sept., 1897, no. 138, p. 337.)

—— [Review of] Contribution towards a monograph of the Laboulbeniaceae; by R. Thaxter. (Science, May, 1898, N. S. vol. vii., p. 752.)

Bailey, L. H. Garden-making; suggestions for the utilization of home grounds; by L. H. Bailey, aided by L. R. Taft, F. A. Waugh, and E. Walker. New York, 1898. 16°. pp. vii.+417. 256 *figs.*

—— Lessons with plants; suggestions for seeing and interpreting some of the common forms of vegetation, with delineations from nature by W. S. Holdsworth. New York, 1897. 12°. pp. xxxi.+523. 446 *figs.*

—— *Same, Abridged:* First lessons with plants. New York, 1898. 12°. pp. x.+127. 116 *figs.*

—— The pruning-book; a monograph of the pruning and training of plants as applied to American conditions. New York, 1898. 16°. pp. 540.

—— The birds and I. (Teachers' Leaflets, 10 April, 1898, no. 10, p. 99.)

—— Notes on carex. xix. (Botanical Gazette, April, 1898, vol. xxv., p. 270.)

—— Third report upon Japanese plums. (Cornell University Agricultural Experiment Station Bulletin, Oct., 1897, no. 139, p. 367.)

—— [Review of] Kleinasiens Naturschätze; von L. Kannenberg. (Botanical Gazette, April, 1898, vol. xxv., p. 283.)

—— *editor*. Rural science series. New York, 1897–98. 2v. 16°.

Bancroft, W. D. The equilibria of stereoisomers [2 articles]. Jour. of Physical Chemistry, March, April, 1898, vol. ii., pp. 143, 245.)

—— Ternary mixtures. II., III. (*Same*, Oct., 1896, Dec., 1897, vol. i., pp. 34, 760.)

Continuation of papers published in Physical Review, 1895-96, vol. iii.

—— Two liquid phases. [2 articles]. (*Same*, April, Oct., 1897, vol. i., pp. 414, 647.)

——, *editor*. The journal of physical chemistry, Oct., 1897-June, 1898.

The Jour. of Physical Chemistry contains numerous reviews of books and of articles in scientific journals by Prof. Bancroft.

Barnett, S. J. Effective value of alternating E. M. F. (Electrician [London], 12 Nov., 1897, vol. xi., p. 98.)

—— On the coefficient of absolute rigidity of quartz fibres and its time and temperature variations. (Physical Review, Feb., 1898, vol. vi., p. 114.)

—— On the surface tension of liquids under the influence of electrostatic induction. (*Same*, May, 1898, vol. vi., p. 257.)

Barr, J. H. Continuous steam engine indicator [discussion]. (Transactions of the Amer. Soc. of Mechanical Engineers, 1897, vol. xviii., p. 1037)

—— Current practice in engine proportions. (*Same*, p. 737.)

—— An erroneous use of Euler's formula. (Engineering News, 19 of Aug., 1897, vol. xxxviii., p. 122.)

—— Multiple cylinder steam engine [discussion]. (Transactions of the Amer. Soc. of Mechanical Engineers, 1897, vol. xix.)

—— Relative strength of gear teeth [discussion]. (*Same*, vol. xviii., p. 776.)

Bates, F. O. The five post-Kleisthenian tribes. [New York], 1898. 8°. pp. v.+(1)+71. (Cornell University studies in classical philology. 8.)

Bedell, F. A short method of determining transformer efficiency. (Electrical World, 4 June, 1897, vol. xxxi., p. 683.)

—— Supplementary experiments in alternating currents: Alternator characteristics. II. (Sibley Jour., March, 1898, vol. xii., p. 214).

—— Transformer losses and their determination. (*Same*, June, 1898, vol. xii., p. 328.)

—— [Review of] The alternating current circuit; by W. P. Maycock. (Science, 10 Dec., 1897, N. S. vol. vi., p. 883.)

—— [Review of] The calculus for engineers; by J. Perry. (Physical Review, March, 1898, vol. vi., p. 179.)

—— [Review of] Electricity and magnetism, by E. Gerard; translated by R. C. Duncan. (*Same*, March, 1898, vol. vi., p. 180.)

—— [Review of] Elements of electric lighting; by P. Atkinson. (*Same*, April, 1898, vol. vi., p. 255.)

—— [Review of] Examples in electrical engineering; by S. Joyce. (*Same* April, 1898, vol. vi., p. 256.)

—— [Review of] Localization of the faults in electric light mains; by F. C. Raphael. (*Same*, Nov., 1897, vol. v., p. 315.)

—— [Review of] The potentiometer and its adjuncts; by W. C. Fisher. (*Same*, April, 1898, vol. vi., p. 256.)

——, *and others*. The predetermination of the regulation of a transformer with non-inductive load; by F. Bedell, R. E. Chandler, and R. H. Sherwood, jr. (Electrical World, 14 Aug., 1897, vol. xxx., p. 190.)

Read before the Amer. Assoc. for the Advancement of Science, Detroit, Aug., 1897.

——, *co-editor*. The physical review, July, 1897–June, 1898.

—— *See also* Moler, G. S., *and* F. Bedell. Instruments for determining the frequency of the alternating current.

Benedict, C. H. Upon the salts of hydronitric acid. (Jour. of the Amer. Chemical Soc., March, 1898, vol. xx., p. 225.)

Bennett, C. E. The foundations of Latin; book for beginners. Boston, 1898. sm. 8°. pp. xi.+(1)+219.

—— Cicero through the centuries. (Latin Notes, Feb., 1898, vol. ii., no. 2.)

—— The four year Latin programmes of the Committee of Twelve. (School Review, April, 1898, vol. vi., p. 239.)

—— [Remarks on the four year Latin programmes of the Committee of Twelve, 13th annual conference of the Associated Academic Principals, Syracuse, Dec., 1897.] (Regents' Bulletin, March, 1898, no. 44, p. 43.)

——, *associate editor*. Cornell studies in classical philology. Nos. 6, 7.

——, *editor*. M. Tulli Ciceronis Laelius de amicitia; with notes. Boston, [1897]. 16°. pp. viii.+123. (Students' series of Latin classics.)

——, *editor*. Tacitus. (Library of the world's best literature. 1898.)

——, *joint editor*. Allyn and Bacon's college Latin series; under the editorship of C. E. Bennett and J. C. Rolfe. Boston, 1897–98.

Bentley, I. M. The psychology of "The grammar of science." (Philosophical Review, Sept., 1897, vol. vi., p. 521.)

—— [Review of] Christianity and idealism; by J. Watson. (Amer. Jour. of Psychology, Jan., 1898, vol. ix., p. 241.)

—— [Review of] Geschichte der neueren deutschen Psychologie; M. Dessoir. (*Same*, April, 1898, vol. ix., p. 404.)

Bullock, C. J., *editor*. A discourse concerning the currencies of the British plantation in America; by W. Douglass. (Economic Studies Nov., 1897, vol. ii., p. 260.)

Burr, G. L. The witch-persecutions. Philadelphia, 1897. 8°. pp. 36. (Translations and reprints from the original sources of European history, published by the Department of History of the University of Pennsylvania, vol. iii., no. 4.)

Carpenter, R. C. New editions of the following works have appeared, 1897–98.

Experimental engineering, 5th ed.

Heating and ventilating buildings, 2d ed.

—— Mechanical properties of certain aluminum alloys. [New York, 1898]. 8°. pp. 17.

"Presented at the Niagara Falls meeting (June, 1898) of the Amer. Soc. of Mechanical Engineers and forming part of vol. xix. of the Transactions."

—— Test of centrifugal pumps and calibration of weir at the Bridgeport pumping station, Chicago, Ill. [New York, 1897.] 8°. pp. 255-300.

"Paper presented at the New York meeting (Nov., 1897) of the Amer. Soc. of Mechanical Engineers, and forming part of vol. xix. of the Transactions."

—— Best load for compound engines [discussion]. (Transactions of the Amer. Soc. of Mechanical Engineers, 1897, vol. xviii., p. 687.)

—— Circulation of hot water [discussion]. (Transactions of the Amer. Soc. of Heating and Ventilating Engineers, 1897, vol. iii., p. 27.)

—— Efficiency of the bicycle [3 articles]. (L. A. W. Bulletin, 22, 29 April, 6 May, 1898.)

—— Flue gas analyses [discussion]. (Transactions of the Amer. Soc. of Mechanical Engineers, 1897, vol. xviii., p. 927.)

—— Measurements of air passing through a register [discussion]. (Transactions of the Amer. Soc. of Heating and Ventilating Engineers, 1897, iii., p. 113.)

—— Methods of proportioning direct radiation. (*Same*, 1897, vol. iii., p. 73.)

—— President's address. (*Same*, 1897, vol. iii., p. 68.)

—— Relative efficiency of ventilation by a chimney and by a fan. (*Same*, 1897, vol. iii., p. 135.)

Discussions on the same, pp. 143, 148, 150.

—— The shaft governor. (Power, May, 1898.)

—— Test of centrifugal pump and calibration of weir at the Bridgeport pumping station, Chicago, Ill. (Sibley Jour., March, 1898, vol. xii., p. 199.)

—— A test of the heating and ventilating plant, New York State Veterinary College. (Heating and Ventilation, Jan., 1898.)

Also printed separately and in Domestic Engineering, May, June, 1898.

—— Tests of the efficiency of the bicycle [discussion]. (Transactions of the Amer. Soc. of Mechanical Engineers, 1897, vol. xviii., p. 1071.)

—— Variation in strength of iron with change of temperature. (Technic, June, 1898.)

—— Ventilation of buildings; translation from Peclet's Traité de le chaleur [a series of articles]. (Heating and Ventilation, July, 1897–June, 1898.)

——, *and* P. J. Fickinger. Method of manufacture and test of a new seamless tube. [New York, 1898.] 8°. pp. 18.

"Presented at the Niagara Falls meeting (June, 1898) of the Amer. Soc. of Mechanical Engineers and forming part of vol. xix. of the Transactions."

Carveth, H. R. Acetaldoxime. (Jour. of Physical Chemistry, March, 1898, vol. ii., p. 159.)

—— Single differences of potential. (*Same*, May, 1898, vol. ii., p. 289.)

—— Study of a three component system. (*Same*, April, 1898, vol. ii., p. 209.)

Church, I. P. Computation of strains in coal and grain bins [discussion]. (Engineering News, 4 Nov., 1897, vol. xxxviii., p. 295.)

—— Mr. Wiener's method of finding the areas of irregular diagrams. (Amer. Machinist, 2 June, 1898, vol. xxi., p. 417.)

—— Unsteady flow of water in pipes; water ram. (Transactions of the Assoc. of Civil Engineers, Cornell University, 1898, vol. vi., p. 31.)

Clinton, L. A. Articles in the Rural New Yorker, July, 1897–May, 1898, vol. lvi., lvii. :

How to enlarge a silo,—What dry fodder for a dairy farm?—A device for distilling water, 10 July, p. 453 ; How to build a root cellar, 24 July, p. 485 ; Mixing crops in the silo,—What will kill dodder, 14 Aug., p. 533 ; Water lime and Portland cement, 14 Sept., p. 581 ; Manure shed built with leaky roof, 16 Oct., p. 677 ; The value of manure from ensilage, 23 Oct., p. 693 ; A silo of one thickness of boards, 30 Oct., p. 709 ; A beet sugar factory in New York State, 20 Nov., p. 751 ; Beet sugar made in New York, 27 Nov., p. 790 ; Wrong idea of a silo, 25 Dec., p. 831 ;—Report of New York State Dairyman's Association, 25 Dec., p. 847, 1 Jan. ; Cost and management of a sugar beet factory,—Effect of turnip on milk flavor, 8 Jan. ; Remarks about a silo,—Report of the annual meeting of the New York State Breeders' Associations, 22 Jan., pp. 53, 62 ; Feeding from a double silo,—The cow of dairy type, 29 Jan., pp. 59, 79 ; Average profits in sugar beets, 5 Feb , p. 85 ; Permanent pasture for sheep,—The Jersey cow,—Wood ashes for hogs, pp. 121, 131, 133 ; How to build a round silo, 26 Feb., p. 152 ; A lamb for the slaughter,—Bottom land for barley,—Rye as dairy food,—How to build a water cistern, 5 March, pp. 157, 160, 161 ; Lumber for a tub silo,—Silo building and filling, 12 March, p. 181 ; Home made sheep dip,—The cement in a silo, 19 March, p. 213 ; Paints, floors and walls,—Stove pipe, in fireplace chimney,—Seeding to pasture,—Fertilizer for oats,—Ensilage all the year around, 26 March, pp. 221, 232 ; The staves for silo,—A calf feeding stanchion,—Hogs on apples in an orchard, 9 April, p. 316 ; Kitchen drain for slops, 23 April ; A few silo questions answered,—Wood and bolts for the silo,—Trouble with moldy ensilage, 30 April, p. 320 ; A granary of stone ; Dishorning young bulls, 1 May, p. 353 ; Treatment for old pastures,—Hay barn for 180 tons, 7 May, pp. 336, 337 ; The importance of thorough soil preparation, 21 May, p. 368.

—— Results of fertilizer experiments with sugar beets at Cornell University in 1897. (Cornell University Agricultural Experiment Station. Bulletin. Feb., 1898, no. 143, p. 509.)

—— *See also* Roberts, I. P., *and* L. A. Clinton. Second report on potato culture.

Comstock, J. H. Insect life; an introduction to nature-study and a guide for teachers, students, and others interested in out-of-door life; with illustrations by A. B. Comstock. New York, 1897. sm. 8°. pp. (3)+349. *Wdcts.*

——, *and* J. G. Needham. The wings of insects [5 articles]. (American Naturalist, Jan.—June, 1898, vol. xxxii.)

Corson, H. How to study Shakespeare [2 articles]. (Chicago Record, 8, 9 July, 1897.)

—— Why should Chaucer be studied? (National Home Reading Union Magazine [London], 7 Dec., 1897.)

Creighton, J. E. The Philosophy of Kant in America. (Kant-Studien, Oct., 1897, Bd. ii., p. 237.)

—— [Review of] The philosophy of knowledge; by G. T. Ladd. (Science, 15 Oct., 1897, N. S. vol. vi., p. 597.)

—— [Review of] Studies in philosophical criticism and construction; by S. H. Mellone. (New World, June, 1898, vol. vii., p. 367.)

—— [Review of] The theory of knowledge; by L. T. Hobhouse. (Philosophical Review, Jan., 1898, vol. vii., p. 77.)

——, *American editor.* Kant-Studien. Bd. ii., Heft 2–4, 1897–98.

——, *co-editor.* The philosophical review. July, 1897-May, 1898.

Dennis, L. M. Articles in Mineral industry in the United States, vol. vi., 1898:

Monazite and the Welsbach light, p. 487; The rare elements, p. 583; Tellurium, p. 635; Uranium, p. 653; Vanadium, p. 656.

—— A new form of discharge for spark spectra of solutions. (Jour. of the Amer. Chemical Soc., Jan., 1898, vol. xx., p. 1.)

—— *Same. German.* Eine neue Form des Entladers für Funkenspektren von Lösungen. (Zeitschrift für anorganische Chemie, Jan., 1898, vol. xvi., p. 19.)

—— [Review of] Spectrum analysis; by J. Landauer; Authorized English ed. by J. B. Tingle. (Jour. of Physical Chemistry, May, 1898, vol. ii., p. 337.)

——, *and* C. H. Benedict. Upon the salts of hydronitric acid. (Jour. of the Amer. Chemical Soc., March, 1898, vol. xx., p. 225.)

—— *Same. German.* Ueber die Salze der Stickstoffwasserstoffsäure. (Zeitschrift für anorganische Chemie. May, 1898, vol. xvii., Heft 1 u. 2., p. 18.)

——, *and* E. M. Chamot. Contributions to the chemistry of didymium. (Jour. of the Amer. Chemical Soc., 1897, vol. xix., p.859.)

Duggar, B. M. Moldy butter. (New York Produce Review, 27 Oct., 1897.)

—— Some important pear diseases. (Cornell University Agricultural Experiment Station. Bulletin, Feb., 1898, no. 145, p. 597.)

Durand, W. F. The resistance and propulsion of ships. New York, 1898. 8°. pp. xi.+431. *Figs.*

—— Entropy and temperature entropy diagrams. (Jour. of the Amer. Soc. of Naval Engineers, May, 1898, vol. x., p. 329.)

—— An experimental study of the influence of surface on the performance of screw propellers. (Transactions of the Soc. of Naval Architects and Marine Engineers, 1897, vol. v., p. 107.)

—— The experimental tank as an aid to the marine engineer and naval architect. (Marine Engineering, Nov. 1897, vol. i., no. 8, p. 4.)

Method of securing an autographic record of steamship vibrations. (*Same.* Sept., 1897, vol. i., no. 6, p. 12.)

—— Present-day ship building problems. (Cassiers Magazine, May, 1898, vol. xiv., p. 47.)

—— Steam ship vibrations [3 articles]. (Marine Engineering, June-August., 1897, vol. i., no. 3, p. 14, no. 4, p. 4, no. 5, p. 11.)

Eldredge, A. H. Practical handling of steam plants by college men. (Sibley Jour., March. 1898, vol. xii., p. 225.)

—— The slide rule; the principle of the logarithmic scale explained; how to make a common slide rule; plain directions for its use. (Machinery, Dec., 1897, p. 122.)

—— Steam calorimeters; their construction, value, and use to the engineer, (*Same*, April, 1898, p. 246.)

Elmer, H. C. Studies in Latin moods and tenses. [New York], 1898. 8°. pp. ix.+231. (Cornell University Studies in Classical Philology. 6.)

—— The aorist injunctive in Latin. (Classical Review, March, 1898, vol. xii., p. 100.)

—— The distinction between the Latin present and perfect tenses in expressions of contingent futurity. (Transactions of the Amer. Philological Assoc., 1897, vol. xxviii., p. xxxvi.)

—— A neglected use of the Latin subjunctive. (Classical Review, May, 1898, vol. xii., p. 199.)

—— The supposed may-potential use of the Latin subjunctive. (Transactions of the Amer. Philological Assoc. 1897, vol. xxviii., p. xvi.)

Ferguson, W. S. The Athenian secretaries. [New York], 1898. 8°. pp. iv.+(1)+80. (Cornell University studies in classical philology. 7.)

Fish, P. A. The brain of the fur seal callorhinus ursinus; with a comparative description of those of zalophus Californianus, phoca vitulina, ursus Americanus and monachus tropicalis. (Jour. of Comparative Neurology, July, 1898, vol. viii., p. 57.)

—— The nerve cell as a unit. (*Same*, p. 99.)

—— *See also* **Williams, W. L.,** *and* **P. A. Fish.** Inhalation pneumonia.

Forman, L. L. Index Andocideus Lycurgeus Dinarcheus. Oxford, 1897. 8°. pp. vi.+(1)+91.

Fowler, *Miss* **M.** A cataloguer's glimpse of Oxford. (Public Libraries, June, 1898, vol. ii., p. 204.)

Gage, S. H. The life history of the toad. (Teachers' Leaflets, 4 April, 1898, no. 9, p. 79.)

—— Notes on the isolation of the tissue elements. (Proceedings of the Amer. Microscopical Soc., 1897, vol. xix., p. 179.)

—— Platinum chlorid for demonstrating the fibrils of striated muscle. (Jour. of Applied Microscopy, Jan. 1898, vol. i., p. 3.)

——, *translator.* Method of injecting the urinary tubules of the frog; [translation from O. Frankl]. (*Same*, Feb., 1898, vol. i., p. 58.)

Gaston, C. P. The calm before the storm. (Cornell Magazine, Dec., 1897, vol. x., p. 114.)

—— In Nero's time. (*Same*, Jan., 1898, vol. x., p. 155.)

—— Library browsing. (*Same*, Nov., 1897, vol. x., p. 72.)

—— The library hunter's mania. (*Same*, Oct., 1897, vol. x., p. 33.)

—— Mr. Henry W. Sage. (*Same*, Oct., 1897, vol. x., p. 1.)

—— Pleasures of scribbling. (*Same*, June, 1898, vol. x., p. 325.)

—— A talk on Collins. (*Same*, March, 1898, vol., x., p. 219.)

—— [Review of] Authors and publishers; by G. H. P[utnam] and J. B. P[utnam]. (*Same*, Feb., 1898, vol. x., p. 191.)

—— [Review of] Cheerful yesterdays; by T. W. Higginson. (*Same*, April, 1898, vol. x., p. 270.)

—— [Review of] Composition and rhetoric; by J. S. Hart, revised by J. M. Hart. (*Same*, Jan., 1898, vol. x., p. 158.)

—— [Review of] Emerson and other essays; by J. J. Chapman. (*Same*, April. 1898, vol. x., p. 272.)

—— [Review of] In the midst of life; by A. Bierce. (*Same*, March, 1898, vol. x., p. 274.)

—— [Review of] Matka and Kotik; by D. S. Jordan. (*Same*, March, 1898, vol. x., p. 231.)

—— [Review of] The story teller's art; by C. Dye. (*Same*, June, 1898, vol. x., p. 343.)

——, *editor.* The Cornell magazine, Oct., 1897-June, 1898.

Hall, T. Shaft governor. (Electrical World, 4 June, 1898, vol. xxxi., p. 6.)

Hammond, W. A. Aristotle's doctrine of the central or common sense. (Transactions of the Amer. Philological Assoc., 1897, vol. xxviii., p. ix.)

Harris, G. D. A gasoline launch for field work. (Science, 5 Nov., 1897, vol. vi., p. 703.)

——, *editor.* Bulletins of American palaeontology. No. 10. Ithaca, N. Y., 1898. 8°. *Plates.*

ix. The tertiary and pleistocene foraminiferae of the Middle Atlantic slope, by R. M. Bagg, jr.—Chautauqua Lake sheels, by C. J. Maury.

Harris, G. W. Notes on the government and control of college libraries. (Library Jour., Oct., 1897, vol. xxii., p. 55.)

Read at the Philadelphia conference of the Amer. Library Assoc., June, 1897.

Hart, J. M. [Review of] The sources of Spenser's classical mythology; by A. E. Sawtelle. (Jour. of Germanic Mythology, 1897, vol. i., no. 3, p. 395.)

——, *editor*. A manual of composition and rhetoric for use in schools and colleges; by J. S. Hart. Revised ed. Philadelphia, 1897. 8°. pp. xvi.+341.

Chapters vi.—xii. written by the editor.

Hopkins, G. S. [Review of] Mammalian anatomy, a preparation for human and comparative anatomy; by H. Jayne. (Philadelphia Medical Jour., 14 May, 1898, vol. i., p. 853.)

Howe, H. C. Colleges and departments [of Cornell University]. (Troy Daily Times Supplement. 1898. p. 14.)

—— Cornell's finances. (*Same*, p. 22.)

—— Down the still river drifting. (Overland Monthly, May, 1898, vol. xxxi., p. 405.)

—— Evening. (*Same*, Nov., 1897, vol. xxx., p. 428.)

—— George Lincoln Burr. (Illustrated Buffalo Express, 12 Sept., 1897.)

—— The home of care. (Overland Monthly, Oct., 1897, vol. xxx., p. 329.)

—— One of grandmother's stories. (*Same*, July, 1897, vol. xxx., p. 60.)

—— Student life at Cornell. (Troy Daily Times Supplement, 1898. p. 24.)

—— When the breeze blows over the barley. (Overland Monthly, Aug., 1897, vol. xxx., p. 172.)

Huffcut, E. W. The law of negotiable instruments: statutes, cases, and authorities. New York, 1898. 8°. pp. xvi.+700.

—— Syllabus of lectures on international law. [Ithaca], 1897. 8°. pp. 30.

—— Interference with contract relations. (Amer. Law Register, May, 1898, N. S. vol. xxxvii., p. 273.)

Hutchinson, J. I. On the reduction of hyperelliptic functions [$\rho=2$] to elliptic functions by a transformation of the second degree. Göttingen, 1897. 8°. pp. 40.

Dissertation for the degree of Doctor of Philosophy.

—— Note on the tetrahedroid. (Bulletin of the Amer. Mathematical Soc., April, 1898, 2 S. vol. iv., p. 327.)

—— A special form of a quartic surface. (Annals of Mathematics, June, 1897, vol. xi., p. 158.)

Irons, D. The nature of emotion. (Philosophical Review, Sept., 1897, vol. vi., p. 471.)

—— The primary emotions. (*Same*, Nov. 1897, vol. vi., p. 626.)

Jacoby, H. S. Discussion of E. Kidwell's paper on the efficiency of built-up wooden beams. (Transactions of the Amer. Institute of Mining Engineers, 1898, vol. xxvii., p. 979.)

——, *joint author*. Roofs and bridges, pt. iv.: Higher structures; by M. Merriman and H. S. Jacoby. New York, 1898. 8°. pp. ix.+276. 136 *figs*.

Jenks, J. W. Political questions; introduction to political science [syllabus]. Ithaca, 1898. 8°. p. 14.

Cornell University, course 34.

—— Causes of the fall in prices since 1872. (Bankers' Magazine, Oct., 1897, vol. lv., p. 547.)

—— *Same*. Revised. (Jour. of Social Science, Dec., 1887, no. 35, p. 31.)

[Review of] The English constitution; a commentary on its nature and growth; by J. Macy. (Annals of the Amer. Academy of Political and Social Science, July, 1897, vol. x., no. 1, p. 107.)

—— [Review of] Governments and parties in continental Europe; by L. A. Lawrence. (Yale Review, Aug., 1887, vol. vi., p. 208.)

—— [Review of] Les origines du socialisme d'état en Allemagne; par C. Andler. (Annals of the Amer. Academy of Political and Social Science, March, 1898, vol. xi., no. 2, p. 112.)

[Review of] The workers, an experiment in reality; by W. A. Wyckoff. (Citizen, Jan., 1898, p. 262.)

Koch, T. W. Additions to the Dante collection in Harvard College library, May 1, 1895–May 1, 1897. (Annual report of the Dante Society, Cambridge, Mass., 1897, vol. xvi., p. 33.)

——, *compiler*. Cornell University Library: Catalogue of the Dante collection presented by Willard Fiske. Pt. I. 1898.

Kortright, F. L. Laboratory work in chemistry. (Science Teacher, Jan., 1898, p. 10.)

—— [Review of] Tutorial chemistry; by G. H. Bailey. (Jour. of Physical Chemistry, 1897, vol. i., p. 568.)

Law, J. Text book of veterinary medicine. Vol. i. Ithaca, 1896. 8°.

—— How to prepare products for shipment to the pathological laboratory. (Amer. Veterinary Review, Nov., 1897, vol. xxi., p. 547.)

A paper read before the New York State Veterinary Medical Soc., Syracuse, Sept. 15, 1897.

Report on the minimum standard of entrance examinations. (Proceedings of the United States Veterinary Medical Assoc., 1897, p. 226.)

Lee, D. C. Extempore speaking; a series of exercises based on studies in American history and institutions. Ithaca, 1897. 12°. pp. 43.

—— How to study a declamation; suggestions to aid in interpreting and assimilating the thought and feeling of an oratorical selection. Ithaca, 1897. 12°. pp. 4.

MacGillivray, A. D. New species of tenthredo. (Jour. of the N. Y. Entomological Soc., Sept., 1897, vol. v., p. 103.)

McMahon, J. The Detroit meeting of the American Association for the Advancement of Science. (Bulletin of the Amer. Mathematical Soc., Nov., 1897, 2 S. vol. iv., p. 48.)

——, *associate editor*. Annals of mathematics. 1897–98.

Macomber, I. J. *See* **Ryan, H. J.,** *and* **I. J. Macomber.** Induction motor design.

Merritt, E. G. The distribution of alternating currents in cylindrical wires. (Physical Review, July, 1897, vol. v., p. 47.)

—— A lecture experiment to show the influence of ultra-violet light on the spark discharge. (*Same*, Nov., 1897, vol. v., p. 306.)

—— A vacuum tube to illustrate the slow diffusion of the residual gases in high vacua. (*Same*, March, 1898, vol. vi., p. 167.)

—— [Review of] Elements of theoretical physics; by C. Christiansen. (*Same*, p. 190.)

——, *co-editor*. The physical review, July, 1897–June, 1898.

Miller, G. A. Errata [dans Comptes rendus de l'Académie des Sciences, tom. cxxiv., pp. 1505–1508]. (Comptes rendus de l'Académie des Sciences, Nov., 1897, tom. cxxv., p. 673.)

—— The non-regular transitive substitution groups whose order is the product of three unequal prime numbers. (Vierteljahrsscrift der Naturforschenden Gesellschaft in Zürich, July, 1897, vol. xlii., p. 68.)

—— Note on the practical application of a substitution group in spherical trigonometry. (Amer. Mathematical Monthly, April, 1898, vol. v., p. 102.)

—— On an extension of Sylow's theorem. (Bulletin of the Amer. Mathematical Soc., April, 1898, vol. iv., p. 323.)

—— On an important theorem with respect to the operation groups of order p^n. (Messenger of Mathematics, Dec., 1897, vol. xxvii., p. 119.)

—— On the commutator groups. (Bulletin of the American Mathematical Soc., Jan., 1898, vol. iv., p. 135.)

—— On the limit of transitivity of the multiply transitive groups that do not contain the alternating group. (*Same*, Jan., 1898, vol. iv., p. 140.)

—— On the primitive groups of degree fifteen. (Proceedings of the London Mathematical Soc., Oct., 1897, vol. xxviii., p. 533.)

—— On the simple isomorphisms of a substitution group to itself. (Philosophical Magazine, March, 1898, vol. xlv., p. 234.)

—— On the supposed five-fold transitive function of 24 elements and $19!\div 48$ values. (Messenger of Mathematics, April, 1898, vol. xxvii., p. 187.)

—— On the transitive substitution groups of degrees thirteen and fourteen. (Quarterly Jour. of Mathematics, Nov., 1897, vol. xxix., p. 224.)

—— On the transitive substitution groups that are simply isomorphic to the alternating or the symmetric group of degree six. (Proceedings of the Amer. Philosophical Soc., Aug., 1897, vol. xxxvi., p. 208.)

—— Sur les groupes hamiltoniens, par M. Jordan. (Comptes rendus de l'Académie des Sciences, 16 May, 1898, tom. cxxvi., p. 1406.)

—— [Review of] Theory of groups of a finite order; by W. Burnside. (Physical Review, March, 1898, vol. vi., p. 182.)

Moler, G. S. *and* **F. Bedell.** Instruments for determining the frequency of an alternating current [abstract]. (Proceedings of the Amer. Assoc. for the Advancement of Science. 1897, vol. xlvi., p. 113.)

Also in L'Électricien, 1 Jan., 1898, vol. xv., p. 2.

Moore, V. A. Blood-serum in the prevention and treatment of infectious swine diseases, with a report of an experiment with swine-plague antitoxine. (Proceedings of the Soc. for the Promotion of Agricultural Science. 1897, p. 26.)

—— The hemospast, a new and convenient instrument for drawing blood for microscopic examination. (Proceedings of the Amer. Microscopical Soc., 1897, vol. xix., p. 186.)

—— Powdered soap as a cause of death among swill-fed hogs. (Cornell University Agricultural Experiment Station. Bulletin. Nov., 1897, no. 141, p. 409.)

—— Remarks on the nature and the differentiation of the infectious swine diseases in the United States. (Amer. Veterinary Review, March, 1898, vol. xxi., p. 813.)

—— Suppurative cellulitis in the limbs of cattle due to streptococcus infection. (*Same*, June, 1898, vol. xxii., p. 169.)

—— Thermo-regulated water baths for the bacteriological laboratory. (Jour. of Applied Microscopy, 1898, vol. i.)

Murray, D. A. An elementary course in the integral calculus. New York, 1898. 8°. pp. xiv.+288.)

Nichols, E. L. [Review of] Humphrey Davy, poet and philosopher; by T. E. Thorpe. (Physical Review, July, 1897, vol. v., p. 64.)

[Reviews of] Intermediate course of practical physics, by A. Schuster; Exercises in physical measurement; by L. W. Austin; A laboratory notebook of elementary practical physics, by L. R. Wilberforce; Physikalisches Practicum, 3d ed., by E. Wiedeman and H. Ebert; Physics course of the California School of Mechanical Arts, part I., by G. A. Merrill and C. W. Baldwin; Physics for grammar schools, by C. I. Harrington; Observation blanks in physics, by W. A. Hammel; Physical experiments, by A. P. Gage; A text book of physics, largely experimental, 3d ed., by E. R. Hall and J. T. Bergen. (*Same*, March, 1898, vol. vi., p. 184–188.)

[Review of] James Clerk Maxwell and modern physics; by R. T. Glazebrook. (*Same*, July, 1897, vol. v., p. 63.)

[Review of] Lehrbuch der Experimentalphysik; by A. Wuellner. (*Same*, April, 1898, vol. vi., p. 252.)

[Review of] The old light and the new, by W. Ackroyd; Roentgen rays and phenomena of the anode and cathode, by E. P. Thompson and W. A. Anthony; The X-ray, or, photography of the invisible, by W. J. Morton; Les rayons X et la photographie de l'invisible, by G. Vitoux. (*Same*, Aug., 1897, vol. v., p. 127–128.)

—— [Review of] The polarizing photo-chronograph; by A. C. Crehore, and G. O. Squier. (*Same*, Sept., 1897, vol. v., p. 191.)

—— [Review of] Some unrecognized laws of nature; by I. Singer and L. Berens. (*Same*, Feb., 1898, vol. vi., p. 127.)

—— [Review of] Tafeln und tabellen zur Darstellung der Ergebnisse spektroskopischer und spectrophotometrischer Beobachtungen; by T. W. Engelmann. (*Same*, March, 1898, vol. vi., p. 183.)

—— [Review of] Transactions of the American Institute of Electrical Engineers, vol. xii., (1895) and xiii. (1896). (*Same*, p. 181.)

——, *editor*. The physical review, July, 1897–June, 1898.

Northup, C. S. An American dialect dictionary. (Cornell Era, 29 Jan., 1898, vol. xxx., p. 179.)

—— A study of the metrical structure of the Middle English poem *The Pearl*. (Publications of the modern Language Assoc., 1897, vol. xii., no. 3, p. 326.)

—— [Review of] The literary history of the American revolution, vol. ii.; by M. C. Tyler. (Cornell Magazine, Dec., 1897, vol. x., p. 117.)

Ogden, H. N. Flushing in pipe sewers. (Proceedings of the Amer. Soc. of Civil Engineers, [advance copy] March, 1898, vol. xxiv., p. 248.)

Shore, R. Orchid notes. (Gardening, 1 Feb., 1898, vol. vi., p. 149.)

—— Tuberous begonias. (*Same*, 1 March, 1898, vol. vi., p. 186.)

—— View of conservatories at Cornell. (*Same*, 15 April, 1898, vol. vi., p. 230.)

Reed, R. C. Dahlia as a stain for bacteria in sections cut by the collodion method. (Transactions of the Amer. Microscopical Soc., 1897, vol. xix., p. 182.)

Reprinted in the Amer. Monthly Microscopical Jour., Feb., 1898.

—— Preparation of culture media with special reference to sterilization. (Amer. Monthly Microscopical Jour., May, 1897, vol. xviii., p. 149.)

Reid, J. S. A course in mechanical drawing. 1st ed., 1st thous. New York, 1898. 8°. pp. v.+128. 168 *figs.*

Roberts, I. P. Dedicatory address of Townshend Agricultural Hall. (Agricultural Student of Ohio State University, Feb., 1898, vol. iv., p. 104.)

—— Fourth report of progress on extension work. (Cornell University Agricultural Experiment Station. Bulletin, Feb., 1898, no. 146, p. 633.)

—— The old and the new. (New York Tribune Supplement, 22 Dec., 1897.)

—— The promotion of agricultural science. (Proceedings of the Soc. for the Promotion of Agricultural Science, July, 1897.)

—— Questioning the soil. (Proceedings of the Western New York Horticultural Soc., 1898, p. 76.)

—— Quicksand in a well. (Country Gentleman, 21 April, 1898, vol. lxiii., p. 304.)

—— Articles in the Rural New Yorker; July, 1897–May, 1898, vol. lvi., lvii. :

How to kill quack grass,—Rye or buckwheat before wheat, 3 July, p. 437; Hoeing the wheat crop, 17 July, p. 466; Ensilage for sheep, 2 Oct., p. 654; Lime on the winter wheat,—Corn smut: cause, prevention, 27 Nov., pp. 771, 773; Beet sugar production in New York State, 11 Dec., p. 802; The dairy heifer's start, 1 Jan., p. 2; When to plow under green rye, 12 Feb., p. 98; Sows fed on ensilage, 23 April, p. 312; Will roots substitute for grain, 14 May, p. 352; Plowing vs. surface cultivation, 28 May, p. 384.

——, *and* **L. A. Clinton.** Second report on potato culture. (*Same*, Nov., 1897, no. 140, p. 385.)

Roe, M. W. The injector. (Sibley Jour., Dec., 1897, vol. xii., p. 101.)

Rowlee, W. W. The flora of artificial lakes in northern New York. (Plant World, Feb., 1898, vol. 1., p. 65.)

—— The morphological significance of the lodicules of grasses. (Botanical gazette, March, 1898, vol. xxv., p. 199.)

—— The swamps of Oswego County, N. Y., and their flora [2 articles]. (Amer. Naturalist, Aug., Sept., 1897, vol. xxxi., pp. 690, 792.)

——, *and* **M. W. Doherty.** The histology of the embryo of Indian corn. (Bulletin of the Torrey Botanical Club, June, 1898, vol. xxv., p. 311.)

——, *and* **K. M. Wiegand.** A list of plants collected by the Cornell party on the Peary voyage of 1896. (Botanical Gazette, Dec., 1897, vol. xxiv., p. 417.)

Ryan, H. J. *and* **I. J. Macomber.** Induction motor design. (Sibley Jour., Nov., 1897, vol. ii., p. 39.)

Schmidt, N. Biblical criticism and theological belief. Chicago, 1897. sm. 8°. pp. 44.

—— *Same.* (New Unity, 25 Nov., 1897, p. 858.)

Also abstract in the Christian World, [London] 13 Jan., 1898.

—— The church of the future. (*Same*, 23 Dec., 1897, p. 957.)

—— Hall Caine's The Christian. (Ithaca Daily News, 6 Dec., 1897.)

—— The Kingdom of God in modern life. (Church Union, Sept., 1897, p. 237.)

—— [Review of] The Hebrews in Egypt and their exodus, by A. W. Thayer. (Amer. Jour. of Theology, vol. xi., p. 144.)

Schurman, J. G. Cornell University: fifth annual report of President Schurman, 1896–97. Ithaca, N. Y., 1897. 8°. pp. 57×cxvii.

—— A generation of Cornell. 1868–1898. New York, 1898. 8°. pp. 57.

—— Address delivered at the opening of the new society house, Nov. 24, 1897. (Transactions of the Amer. Soc. of Civil Engineers, 1897, vol xxxviii., p. 436.)

—— Annual address to the students of Cornell. (Cornell Era, 25 Sept., 1897, vol. xxx., p. 6.)

—— Cornell of to-day. (Troy Daily Times Supplement, 1898.)

—— The genesis of the critical philosophy [3 articles]. (Philosophical Review, Jan.-May, 1898, vol. vii., pp. 1, 135, 225.)

—— The idea of a university; president's address. (Proceedings of the 11th annual convention of the Assoc. of Colleges and Preparatory Schools of the Middle States and Maryland, 1898, p. 86.)

—— The university and free thought. (New York Education, Oct., 1897, vol. i., p. 69.)

——, *editor*. The philosophical review, July, 1897–May, 1898.

Seth, J. A study of ethical principles. 3d ed., revised and enlarged. New York, 1898. 8°. pp. xvi. X 470.

—— The relation of knowledge to will and conduct. (Yearbook of the National Herbart Soc., 1898, vol. iv.)

——, *co-editor*. The philosophical review, July, 1897–May, 1898.

Slingerland, M. V. Bisulphide of carbon for peach borers. (Rural New Yorker, 15 Jan., 1898, vol. lvii., p. 34.)

—— The columbine borer (hydroecia purpurifascia.) (Canadian Entomologist, July, 1897, vol. xxix., p. 161.)

—— The codling-moth. (Cornell University Agricultural Experiment Station. Bulletin, Jan., 1898, no. 142, p. 1.)

—— Facts about plant lice. (Rural New Yorker, 23 April, 1898, vol. lvii., p. 301.)

—— The farm value of the crow. (*Same*, 28 May, 1898, vol. lvii., p. 384.)

—— The gypsy moths in New York State. (*Same*, 31 July, 1897, vol. lvi., p. 499.)

—— Insect enemies of potato beetle. (*Same*, 14 May, 1898, vol. lvii., p. 353.)

—— Life history of the silk-worm. (*Same*, 14 Aug., 1897, vol. lvi., p. 529.)

—— Notes on injurious insects: answers to correspondents [60 articles]. (*Same*, 3 July, 1897–1 June, 1898, vol. lvi., lvii.; Tioga County Herald, 16 July, 1897; Madison County Leader, 30 Sept., 1897; Orleans American, 2 Dec., 1897.)

—— Obituary notice of Dr. Joseph Albert Lintner. (Canadian Entomologist, June, 1898, vol. xxx., p. 165.)

—— The pear psylla. (Eastern New York Horticulturist, April, 1898, vol. i., p. 6.)

Read at the meeting of the Hudson Valley Horticultural Soc., Newburgh, 3, 4 Feb., 1898.

—— The quince curculio. (Cornell University Agricultural Experiment Station. Bulletin, May, 1898, no. 148, p. 691.)

—— The raspberry-cane maggot (phorbia rubivora). (Canadian Entomologist, July, 1897, vol. xxix., p. 162.)

—— Report as chairman of Committee on Entomology. (Proceedings of the Western New York Horticultural Soc., 1898, vol. xliii., p. 11.)

—— Report of progress in the Entomological Division. (Cornell University Agricultural Experiment Station. Bulletin, Feb., 1898, no. 146, p. 641.)

—— Report of the Entomologist, 1896, 1897. (Cornell University Agricultural Experiment Station. Annual report, 1896–97, vol. ix., p. 26, vol. x., p. xiv.)

—— Some new notions about some old insects. (Boston Transcript, 12 Feb., 1898.)

Read before the Massachusetts Horticultural Soc., Boston, 12 Feb., 1898.

—— The story of the bumblebee. (Rural New Yorker, 23 Oct., 1897, vol. lvi., p. 692.)

—— The work of angle-worms. (*Same*, 18 Dec., 1897, vol. lvi., p. 818.)

Snyder, V. Condition that the line common to $N-1$ planes in an N-space may pierce a quadrio surface in the same space. (Bulletin of the Amer. Mathematical Soc., Nov., 1897, 2 S. vol. iv., p. 68.)

Read before the Amer. Assoc. for the Advancement of Science, Detroit, Aug. 10, 1897.

—— Geometry of some differential expressions in hexaspherical coördinates. (*Same*, Jan., 1898, vol. iv., p. 68.)

Read before the Amer. Mathematical Soc., Toronto, Aug. 16, 1897.

—— On the Steiner points of Pascal's Hexagon. (*Same*, June, 1898, vol. iv., p. 441.)

—— [Review of] La géométrie reglée et ses applications. (*Same*, Oct., 1897, vol. iv., p. 28.)

Stephens, H. Morse. Syllabus of a course of twenty lectures on the history of the English in India. Chicago, 1897. 8°. pp. 40.

—— American students of history. (New York Times, Saturday Review of Books and Art, 8 Jan., 1898, p. 25.)

—— Gibbon. (Book Reviews, Feb., 1898, vol. v., p. 260.)

—— How Manila was taken in 1762. (New York Times, Saturday Review of Books and Art, 7 May, 1898, p. 297.)

—— [Review of] La captivité et la mort de Marie Antoinette; par G. Lenotre. (Citizen, Jan., 1898, vol. iii., p. 257.)

—— [Reviews of] Histoire générale du IV^e^ siècle à nos jours, publiée sous la direction de MM. E. Lavisse et A. Rambaud. tom. vii.: Le XVIII^e^ siècle; Periods of European history, VI.: The balance of power, by A. Hassall. (Amer. Historical Review, Jan., 1898, vol. iii., p. 349–352.)

—— [Review of] The literary history of the American Revolution; by M. C. Tyler. (New York Times, Saturday Review of Books and Art, 25 Dec., 1897, p. 8.)

—— [Review of] Murat, lieutenant de l'empereur en Espagne; par le comte Murat. (*Same*, Jan., 1898, vol. iii., p. 363.)

—— [Review of] Souvenirs d'un historien de Napoléon: mémorial de J. de Norvins, publié avec avertissement et des notes par L. de Lanzac de Laborie. (*Same*, Jan., 1898, vol. iii., p. 360.)

——, *associate editor*. The American historical review. July, 1897–June, 1898.

Stewart, O. M. A résumé of the experiments dealing with the properties of Becquerel rays. (Physical Review, April, 1898, vol. vi., p. 239.)

Stroud, B. B. Laboratory directions for practical work in physiology. Ithaca, 1897. 8°. pp. 40.

Privately printed.

—— Morphology of the ape cerebellum. (Proceedings of the Assoc. of Amer. Anatomists, 10th annual session, 1897, p. 107.)

——, Notes on the appendix. (*Same*, p. 127.)

Strunk, W., *jr., editor.* Boynton's selections from Carlyle. (Modern Language Notes, March, 1897, vol. xii., p. 190.)

——, Dryden's Essays on the drama, edited with an introduction and notes by W. Strunk, jr. New York, 1898. 16°. pp. xxxviii. × 181. (English readings.)

—— Germanic grammar. (*Same*, June, 1897, vol. xii., p. 382.)

Talbot, *Miss* **E. B.** Distraction by musical sounds: the effect of pitch upon attention. (Amer. Jour. of Physiology, April, 1898, vol. ix., p. 332.)

Account of experiments made in collaboration with L. Darlington.

Tarr, R. S. New editions of the following works have appeared, 1897–98:

Economic geology of the United States. 3d ed.

Elementary geology, 2d ed.

Elementary physical geography, 6th, 7th eds.

First book of physical geography, 2d, 3d, 4th, 5th, 6th eds.

—— Ohio supplement to First book of physical geography. New York, 1897. 12°. pp. 13. 6 *figs.*

—— Questions for First book of physical geography. New York, 1897. 12°. pp. 56.

—— Suggestions for laboratory and field work in high school geology. New York, 1897. 12°. pp. 100. *Fig.*

—— Field work in geology and physical geography. (School Review, Oct., 1897, vol. v., p. 519.)

—— Geographical names in West Greenland. (National Geographic Magazine, March, 1898, vol. ix., p. 103.)

—— The margin of a Cornell glacier. (Amer. Geologist, Sept., 1897, vol. xx., p. 139.)

—— The peneplain. (*Same*, June, 1898, vol. xxi., p. 351.)

—— Physical geography, geology, [in the schools; discussion, 13th annual conference of the Associated Academic Principals, Syracuse, Dec., 1895]. (Regents' Bulletin, March, 1898, no. 44, p. 125.)

—— Physical geography and geology in the New York Schools. (Science Teacher, April, 1898, vol. i., p. 61.)

—— The physical geography of New York State. Pts. iii., iv. (Bulletin of the Amer. Geographical Soc., 1898, vol. xxx., pp. 28, 97.)

Contents: iii. Plains and plateaus,—iv. The influence of the glacial period upon topography.

—— What is a consensus of opinion as to the place of science in the preparatory schools? (Proceedings of the eleventh annual convention of the Assoc. of Colleges and Preparatory Schools of the Middle States and Maryland, Chicago, 1898, p. 105.)

Also in the Jour. of Pedagogy, Jan., 1898, vol. xi., p. 40.

Thurston, R. H. New editions of the following works have appeared, 1897-98:

Engine and boiler trials. 4th ed., revised.
History of the growth of the steam engine. 4th ed., revised.
Manual of steam boilers. 6th ed., revised.
Manual of the steam engine. 4th ed., revised.
Materials of engineering, vol. iii. 4th ed., revised.

—— Returning the national guard; report of the N. Y. State Board of Examiners to select a new rifle for the national guard. Albany, 1897. 8°.

—— Best load for steam engine [discussion]. (Transactions of the Amer. Soc. of Mechanical Engineers, 1897, vol. xviii., p. 676.)

—— [Cost of power in New England cotton mills.] (Science, 1 Oct., 1897, N. S. vol. vi., p. 518.)

—— Efficiency of boiler grate [discussion]. (Transactions of the Amer. Soc. of Mechanical Engineers, 1897, vol. xviii., p. 379.)

—— The engineer and his war-engine. (North Amer. Review, Dec., 1897, vol. clxii., p. 711.)

—— The engineer and his war-engine [discussion]. (Hartford Courant, 1 Dec., 1898.)

Also in Hartford Times, 7 Jan., 1898; London Engineer, 1 Feb., 1898, p. 36.

—— The 'Kaiser Wilhelm der Grosse.' (Science, 15 Oct., 1897, N. S., vol., vi., p. 589.)

—— The laws of cylinder condensation [discussion]. (Transactions of the Amer. Soc. of Mechanical Engineers, 1897, vol. xviii., p. 984.)

—— Machine à triple-expansion et compounds à très grandes détentes [abstract]. (Revue de Méchanique, Jan., 1898, tom. ii., p. 119.)

—— La machine à vapeur aux Etats Unis. (*Same*, Nov., 1897, tom. i., p. 1025.)

—— La machine d'aujourd'hui et celle de demain [abstract]. (*Same*, May, 1897, tom. i., p. 445.)

—— Multiple-cylinder steam-engine. (Science, 4 March, 1898, N. S., vol. vii., p. 304.)

—— Multiple-cylinder steam-engines—variations of proportions. (Industries and Iron, Dec., 1897.)

To form a part of vol. xix. of the Transactions of the Amer. Soc. of Mechanical Engineers.

—— Multiple expansion engines and the cost account. (Engineer, 7 Aug., 1897, vol. lxxxiv., p. 35.)

—— The National University and technical research. (Regents' Bulletin, Aug., 1897, no. 42, p. 365.)

—— Obituary notices of De Volson Wood and Alfred M. Mayer. (Stevens Indicator, April, 1898.)

—— Photographic impact testing machine [discussion]. (Jour. of the Franklin Institute, Jan., 1898, vol. cxlv., p. 36.)

—— Quadruple expansion engines at 500 pounds pressure. (Marine Engineering, Nov., 1897, Feb., 1898.)

—— Recherches expérimentales sur les effets du proportionment des cylinders des machines compounds [abstract] par M. le Professeur V. Dwelshauvers-Déry. (Revue de Mécanique, Feb., 1898, tom. ii., p. 125.)

—— Relative size of compound engine cylinders. (Electrical World, 11 Dec., 1897, vol. xxix., p. 732.)

—— Report of Finance Committee, City of Ithaca. (Ithaca Jour., 4 March, 1897.)

Also in Ithaca News of same date.

—— Singular stress-strain relations of India rubber. (Science, 19 Nov., 1897, 15 April, 1898, N. S., vol. vi., p. 758, vii., p. 522.)

—— Smoke nuisance and its regulation [discussion]. (Jour. of the Franklin Institute, June, 1897, vol. cxliii., p. 401.)

—— Superheated steam engines [discussion]. (Proceedings of the Institution of Civil Engineers, 1897, vol. cxxviii., p. 135.)

—— Tests of Sulzer's engines [discussion]. (Transactions of the Amer. Soc. of Mechanical Engineers, 1897, vol. xviii., p. 816.)

—— Water-tube boilers [discussion]. (Transactions of the Institution of Engineers and Shipbuilders of Scotland, Dec., 1897, vol. xli., pt. ii., p. 5.)

—— [Review of] The calorific power of fuels; by H. Poole. (Science, 22 April, 1898, N. S., vol. vii., p. 574.)

—— [Review of] Il codice Atlantico di Leonardo da Vinci nella biblioteca ambrosiano di Milano; riprodotto e publicato dalla Regia Accademia dei Lincei sotto gli auspice e col sussido del re e del governo. (*Same*, 27 May, 1898, N. S. vol. vii., p. 755.)

—— [Review of] The entropy-temperature analysis of steam-engine efficiencies; by S. A. Reeve. (*Same*, 25 March, 1898, N. S. vol. viii., p. 427.)

—— [Review of] Report of Naval Court of Inquiry upon the destruction of the United States battleship 'Maine.' (*Same*, May, 1898, N. S. vol. vii., p. 642.)

—— [Review of] Stones for building and decoration; by G. P. Merrill. (*Same*, 18 March, 1898, N. S. vol. vii., p. 392.)

—— [Review of] Whittaker's Mechanical engineer's pocket-book. (*Same*, 25 March, 1898, N. S. vol. vii., p. 427.)

——, *associate editor*. Science, a weekly journal devoted to the advancement of science. July, 1897–June, 1898.

Editor for engineering

Titchener, E. B. An outline of psychology. 3d ed. London, 1897. 8°. pp. xiv.+352.

—— A primer of psychology. London, 1898. 8°. pp. xvi.+314.

—— Color vision. (Science, 29 April, 1898, N. S. vol. vii., p. 603.)

—— The English of the psychophysical measurement methods. (Amer. Jour. of Psychology, April, 1898, vol. ix., p. 327.)

—— Psychology and education. I. Herbart *vs.* modern psychology. (Jour. of Education, 19 May, 1898, vol. xlvii., p. 307.)

—— [Reviews of] The sense of beauty, being outlines of æsthetic theory, by G. Santayana; Eine Theorie des Schönen, mathematisch-psychologische Studie, von P. I. Helwig. (Mind, Oct., 1897, N. S. vol. vi., p. 559-563.)

——, *American editor.* Mind, a quarterly review of psychology and philosophy. July, 1897-April, 1898.

——, *associate editor.* American journal of psychology. July, 1897-April, 1898.

——, *editor.* Cornell University psychological bulletins:

xix. The color perception of children, by M. E. Schallenberger. (Amer. Jour. of Psychology, Oct., 1897, vol. ix., p. 62.)

xx. Distraction by odors, by L. G. Birch. (*Same*, p. 45.)

xxi. Projection of the retinal image, by W. B. Pillsbury. (*Same*, p. 56.)

xxii. Distraction by musical sounds, by L. Darlington and E. B. Talbot. (*Same*, April, 1898, vol. ix., p. 332.)

——, *translator.* Ethics; by W. Wundt. London, 1897. 2v. 8°.

Vol. i. translated by E. B. Titchener and J. H. Gulliver.

Trevor, J. E. The molecular theory. Ithaca, 1898. 8°. pp. 38.

——, *co-editor.* The journal of physical chemistry, Oct., 1897-June, 1898.

The Jour. of Physical Chemistry contains numerous reviews of books and of articles in scientific journals by Prof. Trevor.

Trowbridge, A. B., *editor.* The College of Architecture annual, 1897-98. [Ithaca, 1898]. 8°. *Photo-engrs.*

Tyler, C. M. Five great religions. (Progress, April, 1898, vol. iii., p. 584.)

—— [Review of] Contributions to the science of mythology; by Max Müller. (Philosophical Review, Nov., 1897, vol. vi., p. 679.)

—— [Review of] Religions of primitive peoples; by D. G. Brinton. (Amer. Historical Review, Jan., 1898, vol. iii., p. 335.)

Tyler, M. C. The literary history of the American revolution. Vol. ii. New York, 1897. 8°.

Weber, A. F. European example for American farmers. (North Amer. Review, Feb., 1898, vol. clvi., p. 152.)

—— Professor Adolph Wagner, the economist. (Outlook, 9 Oct., 1897, vol. lvii. p. 370.)

—— Suburban annexations. (North Amer. Review, May, 1898, vol. clxvi., p. 612.)

—— The tramp and the labor colony in Germany. (Chautauquan, March, 1898, xxvi., p. 605.)

—— [Review of] Die socialdemokratischen Gewerkschaften in Deutschland; von J. Schmöle. (Political Science Quarterly, June, 1897, vol. xii., p. 333.)

—— [Review of] Der Zug nach der Stadt; von R. Kuczynski. (*Same*, June, 1898, vol. xiii., p. 354.)

Wiegand, K. M. Galium trifidum and its North American allies. (Bulletin of the Torrey Botanical Club, Aug., 1897, vol. xxiv., p. 389.)

—— A neglected North American euphorbia. (Botanical Gazette, July, 1897, vol. xxiv., p. 50.)

—— A new species of bidens. (Bulletin of the Torrey Botanical Club, Sept., 1897, vol. xxiv., p. 436.)

—— Some rare Washington plants [2 articles]. (*Same*, July, 1897, April, 1898, vol. xxiv., p. 343, xxv., p. 208.)

——, *See also* **Rowlee, W. W.** *and* **K. M. Wiegand.** A list of plants collected by the Cornell party on the Peary voyage.

Wilder, B. G. Errors and omissions detected in the reproduction of the "Neurologia" portion of the "B. N. A."(Basel nomina anatomica) in "Neural terms." Ithaca, N. Y., 1898. 8°. pp. 2.

—— Agassiz at Penikese. (Amer. Naturalist, March, 1897, vol. xxvii., p. 1896.)

Also separately printed.

—— Amphibia or batrachia [letter to the editor]. (Science, 20 Aug., 1897, N. S. vol. vi., p. 295.)

—— The desirability and the feasibility of the acquisition of some real and accurate knowledge of the brain by precollegiate scholars. (Science, 17 Dec., 1897, N. S. vol. vi., p. 902.)

—— Harrison Allen. (Science, 25 Feb., 1898, N. S. vol. vii., p. 262.)

Read before the Assoc. of Amer. Anatomists at its 10th annual meeting Dec. 28, 1897. Also separately printed.

—— *Same*, revised, with a bibliography of 200 titles. (Proceedings of the Assoc. of Amer. Anatomists, 10th annual session, 1897, p. 12.)

—— Report of the majority of the committee on anatomical nomenclature. (Proceedings of the Assoc. of Amer. Anatomists 10th annual session, 1897, p. 27.)

Also separately printed.

—— Comments on the Report of the minority. (*Same*, p. 58.)

—— Some neural terms; lecture delivered before the Marine Biological Laboratory, Aug., 1896. (Biological lectures delivered at the Marine Biological Laboratory of Wood's Holl. [5th series] 1896–97.)

—— The source of *metencephalon* and other Latin names for the segments of the brain [letter to the editor]. (Science, 3 Sept., 1897., N. S. vol. vi., p. 373.)

—— What is the morphologic status of the olfactory portion of the brain? The "anatomy" portion of the "Discussion of biological problems of to-day" before the American Society of Naturalists, Dec. 29, 1897. (Science, 4 Feb., 1898, N. S. vol. vii., p. 150.)

Also printed separately, and in the Annual discussion of the Amer. Soc. of Naturalists, Ithaca meeting, 1897, published by the secretary, and to appear in the Records of the Society, vol. ii.; also in the Proceedings of the Assoc. of Amer. Anatomists, 10th session, 1897, p. 94.

Willcox, W. F. Syllabus of university extension lectures in social science, University Extension Center no. 31. Buffalo, 1897. 8°. pp. 15.

—— Area and population of the United States at the eleventh census. (Economic Studies, Aug., 1897, vol. ii., p. 207.)

—— Density and distribution of the population of the United States in 1890. (*Same*, Dec., 1897, vol. ii., p. 385.)

—— The divorce problem; a study in statistics. 2d ed. New York, 1897. 8°. pp. 74. (Columbia University. Studies in history, economics and public law. Vol. i., no. 1.)

—— Drink, pauperism and crime. (Ithaca Jour., 27 Dec., 1897.)

—— Letters on the Buffalo death-rate. (Buffalo Express, 14 Feb., 1 March, 1898.)

—— Letters to the editor. (New York Voice, 24 March, 14 April, 1898.)

—— Migration of negroes [review of the Northward movement of the colored population, by F. J. Brown]. (Publications of the Amer. Statistical Assoc., Dec., 1897, vol. v., p. 371.)

—— Tenth annual meeting of the American Economic Association: Secretary's report. (Economic studies, Feb., 1898, vol. iii., no. 1, Supplement, pp. 7, 41.)

——, *and* **F. S. Crum.** Trial bibliography of the writings of Johann Peter Süssmilch. (Publications of the Amer. Statistical Assoc., Sept., 1897, vol. v., p. 310.)

Williams, W. L. The air sac mite of the fowl. (Amer. Veterinary Review, April, 1898, vol. xxii., p. 8.)

—— Case reports: Use of adhesive plaster in fractures of birds; amputation of the posterior limb of a sow; Castration of cryptorchid boars; Compound fracture of metatarsus in a dog; Amputation of ovaries and gravid uterus in a bitch; Ascites in a ewe; Hydrops amnii in a cow. (*Same*, June, 1898, vol. xxii., p. 178.)

—— Caudal myotomy *vs.* clitoridotomy. (*Same*, May, 1898, vol. xxii., p. 91.)

—— Extreme luxation of the patellae of a foal. (*Same*, Oct., 1897, vol. xxi., p. 444.)

—— Infectious abortion of mares. (*Same*, Aug., 1897, vol. xxi., p. 303.)

—— Involuntary twitching of the head relieved by trifacial neurotomy. (Jour. of Comparative Medicine and Veterinary Archives, July, 1897, vol. xviii., p. 426.)

—— Luxation of metacarpo-phalangeal articulation in a horse. (*Same*, p. 451.)

—— The parasitic icterohæmaturia of sheep. (Amer. Veterinary Review, Sept., 1897, vol. xxi., p. 377.)

—— Three consecutive recoveries from glanders. (*Same*, July, 1897, vol. xxi., p. 230.)

—— Traumatic pericarditis in a cow recovery. (Jour. of Comparative Medicine and Veterinary Archives, July, 1897, vol. xviii., p. 451.)

—— Veterinary legislation in New York. (Amer. Veterinary Review, March, 1898, vol. xxi., p. 859.)

——, *and* P. A. Fish. Inhalation pneumonia. (Proceedings of the U. S. Veterinary Medical Association, 1897, p. 167.)

Also in the Amer. Veterinary Review, Dec., 1897, vol. xxi., p. 609; Jour. of Comparative Medicine and Veterinary Archives, Oct., 1897, vol. xviii., p. 619; Veterinary Jour., Feb., 1898, vol. xlvi., p. 143.

——, *editor*. Proceedings of the United States Veterinary Medical Association, 1897. Kansas City, 1897. 8°. pp. 272.

Woodruff, E. H. Introduction to the study of law, New York, 1898. 8°. pp. (6)+89.

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PRESIDENT'S REPORT

FOR 1898-99

To the Board of Trustees:

The following Report for the year 1898-99 is herewith submitted to the Board of Trustees. The Report covers the period from September 20th, 1898, to September 19th, 1899.

On the 9th of January, 1899, the President of the United States asked the head of the University to accept the presidency of a Commission to visit the Philippine Islands. On the following day the Executive Committee granted leave of absence to President Schurman until the opening of the University year 1899-1900, and assigned the duties of the President of the University to Professor T. F. Crane, one of the senior professors of the University and Dean of the Faculty of Arts and Sciences, with the recommendation to the Board of Trustees of the appointment of Professor Crane as Acting President from January 23rd, 1899, to the beginning of the next University year, or until the return of the President if he should return before that time. This recommendation was acted upon by the Board of Trustees at the meeting of March 4th, 1899, and Professor Crane was duly elected Acting President for the term already mentioned, and discharged all the duties of the office from the 23rd of January, 1899, to the return of President Schurman on August 21st, 1899. That an exigency of the above nature should have been met with so little disturbance to the internal affairs of the University is a remarkable proof of the present efficient organization of the University and of the unselfish and loyal devotion of the several Faculties.

The impossibility of dividing the record of the year between the two administrations has led to the present form of a joint Report.

THE YEAR IN GENERAL

The year which has just closed has been chiefly notable for the organization and opening of the new colleges and departments founded in 1897–98 : the Medical College, the New York State College of Forestry, and the departments of hydraulic engineering and railway mechanical engineering ; and for the opening of the Infirmary, the munificent gift of Dean and William H. Sage. The Medical College has made not only a promising and successful beginning, but has also held its first Commencement at Chickering Hall in New York on the 7th of June, 1899, when a class of 67 was graduated. The number of students in attendance at the University has been considerably increased by the opening of the Medical College, the growth in numbers from 1,835 regularly enrolled students in 1897–98 to 2,101 in 1898–99 being practically all due to this new department of the University. Another important feature of the year has been the establishment of a Summer Session of the University, taking the place of the Summer School formerly held under the management of individual professors and instructors but not officially connected with the University. The extensive addition to Morse Hall and the enlargement of Sage Chapel described in the last Report have been completed during the present year. The exercises of Commencement week were made memorable by the presence of the Governor of the State, who was thus enabled to acquaint himself personally with an institution in whose welfare and advancement his predecessors as well as himself have shown such a deep interest.

DEATH OF JUSTIN SMITH MORRILL

On the 28th of December, 1898, there died at Washington, District of Columbia, Justin Smith Morrill, for twelve years a representative, and for thirty-one years a senator, in the Congress of the United States from Vermont, and the author of the act donating public lands to the several states for the promotion of education, which led to the foundation of Cornell University. At the first meeting of the Board of Trustees held after Senator Morrill's death a committee was appointed to draft resolutions expressing their gratitude and respect. These resolutions were duly entered upon the minutes of the Board and communicated to the family of Senator Morrill. The University has not been unmindful of its debt to Senator Morrill and has perpetuated his name in the first building it erected and placed his portrait in the Library among those of its other benefactors. Owing to the absence of the President of the University, Senator Morrill's birthday, the 14th of April, was not formally celebrated at Cornell University as it was at other institutions which had benefited by the act of Congress of which Senator Morrill was the author. The Acting President, however, in the college press, called the attention of the students to the day, and impressed upon them the claim of Senator Morrill to their grateful memory.

TRUSTEES

The sudden death of ex-Governor Roswell P. Flower on the 12th of May, 1899, has again, within a brief space of time, left the Board of Trustees without a Chairman. Mr. Flower was elected to that important position in succession to Mr. Henry W. Sage, on October 30th, 1897, in recognition of the interest he had displayed in the University in both his public and private capacity. As soon as the news of his death reached Ithaca the Executive Committee met and appointed a committee to draft resolutions and also provided for the representation of the University and Board of Trustees at the funeral at Watertown, New York. At the meeting of the Board of Trustees the resolutions of the above committee were presented, adopted, and ordered spread upon the minutes and a copy thereof forwarded to the family of ex-Governor Flower. The resolutions were as follows:

"The Trustees of Cornell University have shared the universal feeling of consternation and grief at the sudden death of their Chairman, ex-Governor Roswell P. Flower.

The early life of ex-Governor Flower was one which predisposed him to foster the education of the youth of the State, and to sympathize with the efforts of Cornell University to improve the condition of the agricultural classes. Amid the engrossing cares of a great financial career his heart ever fondly turned to the soil on which he was born, and in all his varied stations in life, as man of business, statesman, and financier, he never forgot the wants of the rural communities, but promoted by every means in his power their social and professional improvement.

In his first message to the Legislature, on the 3rd of January, 1893, Governor Flower called attention to the advantages offered by the State Land Grant College, Cornell University, for carrying on the scientific work of agricultural promotion, and urged the concentration at Cornell University of the various agencies for promoting scientific agriculture. The Legislature concurred in the recommendation of the Governor, and appropriated a liberal sum for the erection and equipment of a building for Cornell University, to be used for instruction and investigation in dairy husbandry and other agricultural pursuits.

In the same message the Governor called attention to the vast importance of veterinary science, 'not merely as affecting the value of our live stock, but because of its intimate relation to the question of public health.' The result of this recommendation was the establishment in 1894, by the Legislature, of a State Veterinary College at Cornell University. Thus some of the greatest economic interests of the State owe their promotion to the intelligent and far-reaching statesmanship of Governor Flower, who fortunately lived to see the beneficent results of the legislation of which he was the author.

In 1897 he visited the beautiful and well-equipped Veterinary College, and with his usual kindly and beneficent spirit presented to the University for the College a liberal sum of money, for the purchase of a special library of works relating to veterinary science.

The Board of Trustees desire to express their appreciation of ex-Governor Flower in all the other relations which they bore to him. His boundless generosity and genial disposition endeared him to the people of the State which he loved so deeply and served so tirelessly. His early struggles for an education, his remarkable success in business, and his unselfish use of his wealth for the benefit of humanity, make him a worthy member of the family of Cornell's benefactors."

At the same meeting of the Board of Trustees it was resolved that as a special mark of respect to the memory of Mr. Flower the election of his successor as Chairman of the Board be postponed until the autumn meeting.

It was also decided that the vacancies caused by the death of Henry W. Sage and ex-Governor Roswell P. Flower be postponed until the fall meeting of the Board.

The other vacancies were then filled as follows:

Charles Sidney Shepard, elected by the Board, succeeded Charles Sidney Shepard, term expired, June 21st, 1899,

Hiram W. Sibley, elected by the Board, succeeded Hiram W. Sibley, term expired, June 21st, 1899.

Stewart L. Woodford, elected by the Board, succeeded Stewart L. Woodford, term expired, June 21st, 1899.

Henry W. Sackett, elected by the Alumni, succeeded John DeWitt Warner, term expired, June 21st, 1899.

Ruth Putnam, elected by the Alumni, succeeded M. Carey Thomas, term expired, June 21st, 1899.

THE FACULTIES

The work of the Faculties has been performed during the last year with unusual smoothness and efficiency, and the relations between the various Colleges have been most harmonious. Fewer changes than usual have taken place. The vacancy caused by the resignation of Professor James Seth has been filled by the appointment of Professor E. B. McGilvary, and the temporary vacancies caused by the absence of Professors Willcox, Hammond, and Barr have been provided for by appointments for one year, as is also the case in the vacancy caused by Professor B. I. Wheeler's retirement. A small number of promotions were made, which seemed imperatively demanded by certain departments. Of this nature were the appointments of B. F. Kingsbury, formerly instructor, as assistant professor of microscopic methods, histology, and embryology, of M. V. Slingerland, formerly assistant entomologist of the Agricultural Experiment Station, as assistant professor of economic entomology, and of W. Strunk, formerly instructor, as assistant professor of rhetoric and English philology.

Additions have also been made to the staff of the Medical College and the New York State College of Forestry. These additions and the changes above mentioned are given in the following paragraphs.

Evander Bradley McGilvary was appointed Sage professor of moral philosophy. Mr. McGilvary was born in Bangkok, Siam, in 1864. Coming in 1873 to the United States, he obtained at a private school at Fayetteville, North Carolina, and later at Bingham School in the same state an education preparatory to entering Davidson College, from which he graduated, in 1884, as valedictorian. From 1886 to 1888, he studied at Princeton, in the college and in the theological seminary, receiving in the latter year the degree of A.M. In 1889 he won the fellowship in New Testament Greek in the Princeton Theological Seminary, giving instruction in Greek during his year as fellow. In 1891 he was sent to Siam by the Presbyterian Board of Foreign Missions, for the purpose of translating the Bible into the Lao dialect of Siamese. By 1894, he had revised his mother's translation of the Gospel of Matthew and had translated from the original Greek the Gospels of Luke and John and the Acts of the Apostles, all of which were published by the American Bible Society. Mr. McGilvary was then recalled by the Board of Missions on account of his inability to accept the deliverances of the Presbyterian General Assembly on questions of doctrine and on the higher biblical criticism. Upon returning to America, he was appointed instructor in English literature in the University of California. The following year he became instructor in logic and psychology. In 1897 he received the Ph.D. degree, and was promoted to be assistant professor of logic and the theory of knowledge. Aside from the Bible versions already mentioned, his publications include articles on the Hegelian Logic and the dialectic method, published in the Philosophical Review and in Mind, and various book reviews contributed to the former publication.

JAMES EWING was appointed professor of pathology. Dr. Ewing is a native of Pittsburg, Pennsylvania. He obtained his academic education from Amherst College, of which he is an A.B. (1888) and an A.M. (1892). His professional education he obtained at the College of Physicians and Surgeons, from which he received the M.D. degree in 1891; in the West Pennsylvania Hospital, the Roosevelt Hospital, and the Sloane Maternity Hospital; and in the Universities of Berlin in Germany and Vienna in Austria. From 1893 to 1897, Dr. Ewing held the position of tutor in histology in the College of Physicians and Surgeons. From 1897 to 1899 he was instructor in clinical microscopy, and from 1896 to 1899 he was also Clark fellow in pathology, both in the same institution. During the period 1896–99 he was likewise instructor in histology, pathology, and bacteriology in the New York College of Dentistry. For the past six years he has served as assistant pathologist in the Roosevelt Hospital, and for the past five years as pathologist in the Sloane Maternity Hospital. His publications are: Notes on Clinical Diagnosis (1898); Studies on Ganglion Cells (1899); and minor articles on pathological subjects.

MARK VERNON SLINGERLAND was appointed assistant professor of economic entomology. Mr. Slingerland, after preparing for college, spent three years as a school teacher before entering Cornell in the fall of 1887. In 1889 he was made assistant entomologist of the Agricultural Experiment Station, a position which he still holds. Continuing his studies, he graduated in 1892 with the degree of B.S. in Agr. He is a member of Sigma Xi. Mr. Slingerland has published about twenty bulletins on injurious insects, and numerous articles in the leading entomological journals, and in agricultural papers. He is well known throughout the State as a lecturer on entomological topics, and as chairman of the committee on entomology of the Western New York Horticultural Society, and was, in 1898, appointed by Governor Black State Entomologist. Legal complications, however, made this appointment of doubtful validity, and Professor Slingerland remained to accept his present position in the University.

WILLIAM STRUNK, JR., was appointed assistant professor of rhetoric and English philology. Dr. Strunk prepared for college in the public schools of Cincinnati, and in 1890 graduated A.B. from the University of Cincinnati. The year 1890–91 he spent as instructor in mathematics in the Rose Polytechnic Institute, at Terre Haute, Indiana. In 1891 he was appointed instructor in English in this University, which position he held until in 1898 he resigned to accept a fellowship in English philology. This having been made for the time a traveling fellowship, Dr. Strunk spent 1898–99 in attendance upon the courses of the Sorbonne and the Collège de France, Paris. He received the title of Élève de l'École des Hautes Études. In 1896 he received the degree of Ph.D. from this University. Dr. Strunk is editor of two volumes of annotated English classics, in the English Reading Series.

JOHN CLAYTON GIFFORD was appointed assistant professor of forestry and curator of collections. Mr. Gifford was born in New Jersey. He graduated B.S. from Swarthmore College in 1890, and thereafter spent a year in the University of Michigan, in the study of botany, and a year in the Johns Hopkins University, as a student of bacteriology and diseases caused by fungi. Mr. Gifford served for four years as instructor in economic botany in Swarthmore College, and spent three years in travel and study in the West Indies and Central America, and six months in the forests of Europe. He was for three years forester for the New Jersey State Geological Survey. At the close of a year's European study, Mr. Gifford received the degree of D.Œc. from the University of Munich, in April of the present year. Dr. Gifford founded and for three years edited the Forester, the official organ of the American Forestry Association, and is the author of reports to the geological survey of New Jersey on the forestry conditions of the coastal plain of that state.

BENJAMIN FREEMAN KINGSBURY was appointed assistant professor of microscopic methods, histology, and embryology. Mr. Kingsbury is a native of St. Louis, and obtained his education in the public schools of that city, those of Defiance, Ohio, and in the Defiance Normal College. He then entered Buchtel College, from which he graduated, with the degree of A.B., in 1893. Coming to this University for graduate work, he received the degree of M.S. in 1894 and of Ph.D. in 1895. During the academic year 1895–96 Dr. Kingsbury held a graduate scholarship in zoology, and during 1896–97 he was fellow in vertebrate zoology. He was then, in 1897, appointed instructor in microscopic methods, histology, and embryology. He has published numerous monographs and scientific articles in the Proceedings of the American Microscopical Society, the Journal of Comparative Neurology, the Journal of Applied Microscopy, etc. Dr. Kingsbury is a member of the American Microscopical Society, the American Association for the Advancement of Science, and the American Morphological Society, and since 1897 has been an associate editor of the Journal of Comparative Neurology.

STUDENTS

The total number of persons receiving instruction at the University in 1898–99 was 2,543. Exclusive of those attending the Summer Session (423, of whom, however, 60 are to be subtracted as also in attendance in the other sessions of the year) and the Winter School in Agriculture (89), there were regularly enrolled 2,101 students. This is by several hundred the largest attendance ever registered. If the 278 students in the new Medical College be deducted the total is indeed two less than in 1897-98, in which year the largest previous enrollment was reached. But about 30 of the medical students were in the University pursuing the Medical Preparatory and other courses, before the establishment of the Medical College, and if these be allowed for, the enrollment after omitting medical students is still, by a fair margin, larger than ever before.

The attendance was distributed as follows:

GRADUATE DEPARTMENT:

Fellows	29	
Scholars	17	
Graduates, candidates for Advanced Degrees	155	
Graduates, not candidates for Degrees	35	
Total, deducting for names counted twice		190

GRADUATE STUDENTS IN UNDERGRADUATE COURSES 143

ACADEMIC DEPARTMENT:

Senior Class	134	
Junior Class	124	
Sophomore Class	139	
Freshman Class	213	
Special Students	21	
Total		631

COLLEGE OF LAW:

Senior Class	17	
Second Year Class	78	
First Year Class	65	
Special Students	4	
Total		164

COLLEGE OF AGRICULTURE :

Senior Class	6	
Junior Class	6	
Sophomore Class	17	
Freshman Class	17	
Special Students	39	
Total		85

STATE COLLEGE OF VETERINARY MEDICINE :

Third Year Class	8	
Second Year Class	4	
First Year Class	11	
Total		23

COLLEGE OF ARCHITECTURE :

Senior Class	7	
Junior Class	10	
Sophomore Class	14	
Freshman Class	13	
Special Students	4	
Total		48

COLLEGE OF CIVIL ENGINEERING :

Senior Class	27	
Junior Class	38	
Sophomore Class	60	
Freshman Class	60	
Total		185

SIBLEY COLLEGE OF MECHANICAL ENGINEERING :

Senior Class	69	
Junior Class	91	
Sophomore Class	143	
Freshman Class	181	
Special Students	17	
Total		501

THE MEDICAL COLLEGE:

Senior Class (3 year course)	71	
Junior Class " "	72	
Senior Class (4 year course)	12	
Junior Class " "	6	
Sophomore Class (4 year course)	7	
Freshman Class " "	104	
Special Students	6	
Total		278

STATE COLLEGE OF FORESTRY:

Junior Class	3	
Sophomore Class	3	
Freshman Class	1	
Total		7

Total, deducting for 11 names counted twice		2101
SUMMER SESSION	423	
WINTER COURSE IN AGRICULTURE	89	
Deduct for names counted twice	60	
Total new one-term students		452
Grand total of students at University		2543

In 1897–98 the number of persons entering the University for the first time was 657, exclusive of the Summer Session and the Winter School in Agriculture. In 1898–99 the corresponding total was 883, while if those one-term students be included the number of new students at the University during the year under review reaches the imposing figure of 1,325. Of these 381 entered from other colleges and universities. In the Registrar's report (see Appendix XIV, pp. LXXXII–LXXXIV) will be found an interesting list of the 237 colleges from which in the last thirteen years such students have come to Cornell, with the number coming from each institution. The number matriculating by examination or by the presentation of Regents' diplomas and school certificates has continued its steady return to the level of 1893–94, at the close of which year the general advance in entrance requirements began. The figures for the six years are 389 in 1893–94; 297 in 1894–95; 311 in 1895–96; 361 in 1896–97; 358 in 1897–98; and 375 in 1898–99.

The number of all degrees conferred in June, 1899, was 412, of which 377 were first degrees and 35 advanced degrees. Although this total is larger than in any year prior to 1897, in which the maximum was reached, it is less by 19 than in that record year. This is in large measure the harvest of the lean years following upon 1893–94, when the annual increase in entrance requirements temporarily diminished the entering classes, without, of course, at once affecting the graduating classes.

It is worthy of remark, however, that while the enrollment of graduate students was slightly larger than in 1897–98 and considerably larger than 1896–97, the number completing their studies and taking advanced degrees in June 1899 was smaller than in either. As graduate students are not registered in classes for a course of a fixed number of years, the fluctuations in the number of degrees granted are always considerable, and for obscure reasons. In this case, however, the diminution coincides precisely with a diminution, elsewhere explained, in the number of candidates for M.C.E. and M.M.E., for which but one year of study is required and with the lengthening of the minimum period of graduate study for the Ph.D. from two to three years. It may fairly be concluded that the increased attendance in the Graduate Department and the (temporary) decrease in the number of advanced degrees granted alike point to a growing preponderance of men studying for the degrees requiring longer periods of residence, and to a consequent increase in importance to the world of scholars of the work done in the Department.

The University continues to be, and is, indeed, every year more and more, a place of serious work and of close attention to studies. The growth in numbers does not prove a distraction from work, being probably more than counterbalanced by the increased mental maturity consequent upon higher standards of admission. The past year has been characterized not only by irreproachable decorum on the part of the student body as a whole, but also by less than the usual number of individual shortcomings.

THE GRADUATE DEPARTMENT

During the last twelve years 955 graduates, coming from 160 different institutions, have been admitted to graduate work in Cornell University. From this total are excluded the large number of graduates of other colleges who are annually admitted to undergraduate courses in the Academic Department and the professional colleges. In 1898–99 there were in the Graduate Department 189 graduate students exclusive of 142 enrolled in undergraduate courses. Of these 155 were candidates for advanced degrees, which is an increase of three over the enrollment of 1897–98 and of eighteen over that of 1896–97. There were 93 studying for the Ph.D., 6 for the D.Sc., 31 for the A.M., 10 for the M.S., 3 for the M.C.E., and 12 for the M.M.E. degree.

Dean White's report (Appendix II, pp. VII–XVIII) contains many interesting details regarding the administration of the Graduate Department. Of these, attention may be called to the action of the University Faculty allowing credit, under proper restrictions, to be given for graduate work done in the Summer Session. The importance which this action might assume may be seen from the attendance upon the Summer Session of 1899 of 130 college graduates, although a few only asked that the work done by them be credited toward an advanced degree. The Summer Session may in this way do a valuable work for busy scholars employed in college and school teaching during the academic year, but anxious, when able, to prosecute further investigations already begun, or to strengthen themselves in departments of their work where experience has demonstrated its need.

It is worth pointing out also that the continued growth in numbers of the Graduate Department is in the face of action relegating to undergraduate registration considerable classes of students formerly enrolled as candidates for advanced degrees. Reference is made to this fact in Dean White's report (Appendix II, pp. X–XI) where he states that the general standard of the other agricultural colleges of the United States is so much lower than the standard of our College of Agriculture, that graduates of those institutions coming to Cornell must with some exceptions be denied standing as candidates for second degrees, and instead enrolled as candidates for the Bachelor's degree at Cornell, or as special students for a time sufficient to bring them up even with graduates of our College of Agriculture. As Dean White well says "This strictness in dealing with such cases may be regarded as a national service, as it suggests and encourages the maintenance of a high standard for admission and graduation at agricultural colleges elsewhere." The same relatively advanced character of the work in our College of Civil Engineering and in Sibley College has similarly relegated to registration as candidates for the C.E. and M.E. degrees many graduates of technical colleges elsewhere who were formerly enrolled as candidates for our M.C.E. and M.M.E. The measure of this change may be seen in the table in Dean White's report (Appendix II, p. XI) which shows the number of candidates for M.C.E. to have fallen from 18 in 1893–94 to 3 in 1898–99, and of candidates for M.M.E. from 48 to 12, whereas the number of those studying for the Ph.D. degree increased in the same period from 77 to 93, and of those studying for A.M. from 15 to 31. The other side of the same fact is shown in the increase of graduates of other colleges studying for first degrees at Cornell from 45 in 1894–95 to 142 in 1898–99.

The action of the University Faculty and the Board of Trustees establishing for holders of the Ph.D. degree the position of honorary fellows has already justified itself. Nine appointments were made in 1898–99, four of those appointed holding the Doctor's degree from Cornell, two from Halle, and one each from Wisconsin, Leipzig, and Vienna. This action is in line with that regarding graduate work in the Summer Session as tending to place the resources of the University so far as possible at the disposal of those who are best equipped for using them.

THE ACADEMIC DEPARTMENT

The number of students in the Academic Department in 1898–99 was 631, or excluding special students 610, an increase over the figures for last year of 7 in the total, and of 17 in students regularly enrolled.

The most important change in the Academic Department this year has been that caused by the withdrawal of Professor B. I. Wheeler to accept the presidency of the University of California. The Executive Committee of the Board of Trustees in accepting Professor Wheeler's resignation expressed their appreciation of his long and valuable services to the University. During his professorship the department of Greek has greatly increased in numbers and influence, the Museum of Classical Archæology has been founded, and classical studies at Cornell have received an impetus and won a reputation abroad which it is earnestly to be hoped will not be seriously diminished by Professor Wheeler's retirement. The change occurred too late to make permanent arrangements for next year, and consequently the department of Greek was placed for one year in charge of Professor G. P. Bristol, and Mr. G. D. Chase, a graduate of Harvard, who has continued his studies under the best teachers in Germany, was appointed for the same period as assistant professor of comparative philology.

In other departments there were less changes than usual, the only resignations to be noted being those of Mr. Shurter from the department of elocution and oratory and of Dr. Bullock from the instructorship in political science, the former to take the chair of elocution and oratory in the University of Texas, the latter to accept the chair of economics in Williams College. On the side of appointments there is much more to be said. Most important is the fact that after a year of search, the Sage chair of moral philosophy has now been filled by the appointment of Professor McGilvary (see p. 9), Two of the staff will take 1899–1900 as a sabbatical year, Professor Willcox going to Washington to serve as chief statistician on the Twelfth Census, while Professor Hammond will spend the year in Europe. The work of the former is to be carried on by Dr. Powers, formerly of Leland Stanford, Jr., University, and that of the latter by Dr. Fairbanks, late Fellow of the American School of Classical Studies, at Athens.

An additional assistant professorship was created in the department of rhetoric and English philology and filled by the appointment of Dr. Strunk (see p. 11). The instructing staff in the department of entomology has received a needed strengthening in the appointment of Mr. Slingerland (see p. 11) as assistant professor; while the growth of classes in the department of microscopical methods, histology, and embryology as well as the excellent work of Dr. Kingsbury (see p. 12) have called for his promotion to an assistant professorship.

The most important legislation of the year in the Academic Department was that reaffirming the present marking system, a numerical one on a scale of one hundred, and making the thesis formerly required for graduation elective. There has frequently been manifested a desire on the part of members of this Faculty to substitute for the present numerical system one expressing the standing by words or letters, with or without remarks. After long discussion it seemed best to retain the old system as on the whole the most convenient for purposes of record.

With the introduction of the elective system the question of making the thesis also elective arose and after careful consideration that view prevailed. The thesis, which originally was a graduation essay, had gradually been made an evidence of special work in some one department. In many cases it was difficult, if not impossible, for the student to specialize sufficiently before his senior year to enable him to produce a satisfactory thesis. This difficulty was increased by the fact that students in the Academic Department are allowed to take a year in other Colleges, divided between the last two years of their course. They could not write a thesis in the other Colleges nor could they often specialize in the Academic Department in the time which was left. The action of the Faculty of Arts and Sciences was not intended to disparage the value of the thesis to those who were perfectly prepared for it, and such will always be encouraged to write one, for which ample credit will be given.

The chief subject of interest in this Department, however, this year, as in 1897–98, has been the working of the elective system adopted in 1896–97. A detailed account will be found in the report of the Dean of the Faculty of Arts and Sciences (Appendix III, pp. XX–XXX). This system, as described in previous Reports, formed part of a scheme, the other elements of which were, first, the raising of all standards of admission to the Academic Department to the level of those set for entrance upon the A.B. course, and secondly, the consolidation of the Ph.B., B.L., and B.S. degrees with the A.B. degree. The subjects for admission, in addition to the primary lists, consist of three equalized options : (A) Greek and Latin ; (B) Latin and advanced French or advanced German ; and (C) advanced French, advanced German, and advanced mathematics.

In 1897–98, the first year of the new system, of 137 freshmen admitted for the first time into the Academic Department, 47 entered by Group A, 81 by Group B, and 9 by Group C. In 1898–99, out of 166 similarly admitted for the first time the figures were respectively 79, 78, and 9. The result of permitting students to enter the A.B. course at Cornell has been notably to increase the proportion of students grounded in Greek and Latin. The latter study was first to profit, but the rising tide reached Greek in the second year. In the last year of required classics for entrance to the A.B. course 106 presented Latin, in the first year of elective classics 128, and in the second year 157.

The choice of studies by freshmen in the Academic Department has been closely followed for two years and will be for some years to come, that the precise effect upon the general curriculum of the student of a thorough-going elective system may be noted. At present it is interesting to find that among freshmen language subjects have an increasing preponderence of choice, the electives in languages in the first year of the system being 524 to 351 of all other studies, and in the year just closed 680 to 355. Quite one half of the sum total of "other studies" elected are in history and political science and mathematics, the natural sciences being a small part of the work of A.B. freshmen. The most popular sciences are chemistry and physiology, but in 1898–99 Latin was chosen more than twice as often as both together.

It is no less instructive to follow student curriculum-making into the sophomore year. The class which entered in the fall of 1897 gives us data for this. The total of electives in the sophomore year of this class is 200 less than in the freshman year. Language electives still form more than half the total, being 322 out of 610. Philosophy, not open to election by freshmen at all, was chosen 55 times by sophomores; history and political science were chosen 144 times by sophomores as against 90 times by freshmen, but mathematical electives fell from 77 to 19. The sciences most popular with freshmen continued in the main to be such with sophomores (chemistry, botany, physics) but the total of science electives fell from 121 to 67. In a word the languages still preponderate during the second year of the A.B. student, though not so heavily as in the first year; science cannot be said to do more than hold its own; but those humanities based upon and using language studies, as history and philosophy, play an increased part.

It is unquestionably harder for a student to meet the requirements of advanced French, advanced German, and advanced mathematics comprised in Group C than the corresponding requirements in Groups A and B. Consequently candidates are forced, against their will, into the latter groups, and particularly B; as is shown by their resuming the natural bent of their inclinations after matriculating. This is the explanation of the fact that, in 1897–98, 39 freshmen dropped the classics by which they entered, and in the year just closed 45 followed the same course. As was pointed out in the last Report an alternative of science for the mathematics in Group C has been adopted by way of making it easier for the schools to give the instruction, without diminishing the amount of the student's preparation. This alternative goes into effect in 1899–1900, and the result will be duly noted.

The Academic Department embraces a scientific and a literary side. On the side dealing with literary pursuits its equipment is found chiefly in the library and seminary rooms. The processes and results of this work cannot be represented in a tangible form as is the case in the technical schools, and hence the needs of the Academic Department are apt to be overlooked or their importance underrated. So far as the library and seminary facilities are concerned the University has made generous provision and the Museum of Classical Archæology is one of the many manifestations of the liberality of Henry W.

Sage. There is, however, a pressing need which is also shared by other departments. This need, relating to the present unsuitable and inconvenient quarters occupied especially by the teachers of languages and history, has been long felt, and has already been urged in the Report for 1895–96, p. 42.

At present the rooms used for languages and history stretch from Sage College to White Hall, occupying all the intermediate buildings except McGraw Hall. Part of the American history is taught in Sage College, another part in Morrill Hall, mediæval history is in Barnes Hall and European history in Boardman Hall, Latin is in Morrill Hall and Greek in White Hall. German and French are separated in the same manner. English literature is in Barnes Hall and rhetoric and English philology in Library Hall and Morrill Hall. Even with this wide geographical distribution it has been extremely difficult to assign rooms for the coming year. The expansion of the College of Law will prevent the use of its rooms by other departments to the extent possible in the past.

In addition to this most unfortunate separation of related subjects, the rooms now in use are inconvenient and inadequate. Most of them are insufficiently ventilated for occupation by large classes, and, as they are used by various departments in succession and not provided with studies or withdrawing rooms, it is impossible to keep in them illustrative materials for the use of the class.

It will seem strange that with an apparent abundance of rooms, and many of them unoccupied for long periods in the day, the difficulties above mentioned should exist. It must be remembered, however, that the great pressure of work in the Academic Department comes in the morning and that owing to the arrangement of work in the technical schools and in the various seminaries, it is impossible to utilize the afternoons to a much greater extent than is now done.

The ideal solution of the problem would be the erection of a Hall of Languages with suitable lecture and recitation rooms, the latter provided with studies, adjoining if possible, if not, arranged as in Boardman Hall, which affords an excellent example of proper quarters for students and professors. The gain to the student in the economy of time and increased comfort would be great, while suitable rooms for professors would facilitate consultation with students, and greatly increase the efficiency of instructors. The time now spent between the hours of recitation could be used in preparation for coming work more economically than at present.

Considerable relief would be afforded if the rooms in Morrill and White Halls now occupied by Agriculture, Forestry, and Medicine were placed at the disposal of the Academic Department, as would be possible if buildings were soon erected for these Colleges as has been recommended in the present Report. In this case a rearrangement of rooms could be made and the present conditions greatly improved.

SUMMER SESSION

In the summer of 1892 courses of instruction were offered by professors and instructors of the University in the following subjects: botany, chemistry, mathematics, philosophy, physics, English, French, German, drawing, and physical culture. One hundred and fifteen students were in attendance, of whom eighty-five were teachers or advanced students. This first Summer School had no official connection with the University, but was managed by a committee of instructors and the expenses were met from the fees of students. This venture was so successful that the Summer School was henceforth made an integral part of the University, work done in the Summer School was credited in the University, and the names of instructors and students printed in the Register. The University exercised some control over the courses of instruction, but otherwise the management of the School was entirely unofficial.

This state of things continued until 1898, when the Executive Committee, after a careful consideration of the facts, decided that no private summer schools should be held in the University buildings and established an official Summer Session, in which instruction should be offered in all subjects included in the high school curriculum, as far as possible, and should be of the highest grade, and, in general, in the hands of professors and not of the subordinate members of the Faculty. It was further provided that appointments to the teaching staff should be made by the Board of Trustees or the Executive Committee on the nomination of the President, and at such rate of compensation as might be fixed by the Trustees. It was also decided that the primary object of the Summer Session was to furnish instruction to teachers in high schools and academies, and that it should not be used as a school to prepare students for entering the University, but that provision for the instruction of college professors, university students, and others who are qualified to take the instruction should not be excluded.

The Summer Session was duly organized under the above general scheme by the appointment of Professor DeGarmo as Dean and the selection of a staff of instruction consisting for the most part of heads of departments and assistant professors. Provision was made for an extensive curriculum, a part of which, nature study, was supported by the State fund for the extension of agricultural knowledge, and open without expense to teachers from the State of New York. With this exception all students paid one fee which entitled them to enter all classes for which they were prepared.

The Summer Session began on the 6th of July and ended on the 16th of August. During this time four hundred and twenty-three students were registered, of whom one hundred and eleven pursued exclusively the courses in nature work. Of the entire number sixty were students regularly enrolled in the University and twenty-five had been previously connected with the University, leaving three hundred and thirty-eight new students, so to speak. There were three hundred and forty-four teachers and two hundred and thirty New York students in the Session. Leaving out the nature study, there were eight hundred and fifty registrations in the various courses, and four hundred and seventy-nine examination papers were handed in on the completion of the course. The subjects most largely pursued were: English, psychology, science and art of education, mathematics, and geology and physical geography. In addition to the regular courses of instruction educational conferences were held each week at which topics of interest to teachers were discussed by distinguished educators invited to Ithaca for that purpose.

There is little difference of opinion among all connected with the Session, whether pupils or instructors, as to the great success of the undertaking. Professor Bailey, on behalf of the nature study work, says: "It is the opinion of those who were intimately concerned with this work that it was one of the most useful and successful ventures in summer school teaching which the University has yet undertaken," and the Dean of the Faculty of the Summer Session says in his report: "The experience of this, the first Summer Session indicates that the work can be conducted without serious financial sacrifice, while it is perhaps the almost unanimous conviction of its professors and instructors that the work is well worth doing."

With the experience gained this year the Summer Session can, if it is decided to continue it, be managed somewhat more economically, and the numbers in attendance will undoubtedly increase after the success of the first year. It will also be possible to settle wisely a number of questions which have arisen as to the relation between the work in nature study and the other departments of the Summer Session, etc.

THE COLLEGE OF LAW

The year 1898–99, as was pointed out in the last Report (p. 34), was the crucial point in the transition from a two-year to a three-year course in the College of Law. All who possibly could hastened to take the degree at the last Commencement at which two years' study sufficed, so that the number of degrees rose suddenly from 81 in 1897 to 105 in 1898, and, the turning point having been reached, fell with equal suddenness to 25 in 1899. At the same time the great increase in entrance requirements which went into effect for the first time in September, 1898, reduced the number of men in the first-year class in law from 104 in 1897–98 to 65 in 1898–99. To these two causes is due the reduction in total attendance from the abnormally high figure of 308, or, excluding members of the Academic Department electing work in law, 246 students in 1897–98 to the abnormally low figure of 224, or, with the same exclusion, 174 students in 1898–99.

Any immediate return to the larger of these totals is not to be expected, but some gain over last year will probably be manifested this fall. The quality of the student body, however, continues to improve. Out of the 174 regularly enrolled students of law 17 had taken a Bachelor's degree in the liberal arts and sciences, and if to these be added the 50 students in the general and technical courses who elected certain law studies there will be found to be a total of 67 graduates (actual and potential) who are candidates for the degree in law, or 30 per cent of the whole number of law students, as against only 23 per cent the year previous.

In his report (Appendix IV, pp. XXXIII–XXXIV) Judge Finch records the valuable service of Mr. Charles H. Blood, district attorney of this county, who carried on Professor Pound's classes in the latter's illness during the fall term. He also notes the successful completion of Professor Redfield's first year, the first also of his department of the College of Law, and the growth of his work in teaching the law of procedure to such an extent that he has been granted an assistant for the coming year, Mr. Frederick Diamond Colson, B.L., '97, LL.B., '98.

THE COLLEGE OF AGRICULTURE

There were 85 undergraduate students in the College of Agriculture during the year, of whom 46 were taking the regular four-year course, and 39 the two-year special course; the corresponding figures for the year previous being 84, 56, and 28. The decrease in regular students and increase in special students follows from the added severity, beginning last fall, of the entrance requirements in the College of Agriculture, which are now about a year higher than in other agricultural colleges. Besides the students enumerated, there was an enrollment of 39 students in general agriculture, and 50 in dairy husbandry in the winter course of eleven weeks. Cornell University educates all these students in laboratory and lecture room free of all charge.

The work of disseminating agricultural information and creating an intelligent interest in nature throughout the State has assumed formidable proportions. The enrollment in the farmer's reading course has grown from 4,800 in 1897–98 to upwards of 10,000 at present. By way of text for this course 600,000 pages of lesson leaflets have been distributed. The work of teaching the teachers of the State has caused an increase of 7,000 in the teacher's leaflet mailing list, the total number regularly receiving the leaflets being now 25,000. Sixty editions of 13 leaflets have been printed and distributed this year. One hundred Junior Naturalist Clubs, with a membership of 2,000, have been formed, their studies being carefully guided. Not least important was the gathering at the University during the summer of 111 school teachers for instruction in nature study in insect life, in plant life, and on the farm. The work was very satisfactory and it is to be regretted that lack of facilities for instruction necessitated limiting the number in the course so rigidly. Some 20 specialists are employed by the College of Agriculture to give all or a part of their time to investigations, their results being disseminated in pamphlets entitled bulletins, of which twenty were issued in 1898–99. The work of the College has won golden opinions from educators all over the United States, some notable expressions of which are quoted with pardonable pride by Director Roberts in his report (Appendix V, pp. XXXV–XLI).

The above brief statement of the work of the College of Agriculture during the past year gives, even if read in connection with the full report of the Director, a very inadequate idea of the extraordinary and far-reaching activity of a department, which makes ample and generous returns for the enlightened bounty of the State. While suitable provisions have been made by the University for the prosecution of certain sides of the work of the department, it is unfortunately true that the quarters occupied by the College are inadequate in extent and unsuitable in character and arrangement. Applied agriculture, the Experiment Station, and the horticultural division of the College, including the Bureau of University Extension, are provided with rooms in Morrill Hall, while entomology, not including the insectary, is in White Hall, a separate building at some distance. These quarters are cramped and, from the surrounding departments, incapable of expansion. Class room facilities are totally inadequate, while much valuable material can not be utilized for exhibition or proper use by students. It is needless to dwell on the urgent necessity for the improvement of these conditions at the earliest possible moment. This need has been repeatedly emphasized in the Director's annual report, and has not been overlooked by the Trustees ; but for reasons which it is unnecessary to repeat here the various plans devised to obviate the above difficulties have yielded to what seemed even more urgent demands. A suitable building, carefully planned to accommodate the various divisions of the College of Agriculture as well as the College of Forestry, is certainly among the most important needs of the University. Such a building would, as has been shown above, in the section relating to the Academic Department, afford relief to other departments as well, by vacating a considerable number of rooms in Morrill and White Halls, now greatly needed for other purposes.

THE NEW YORK STATE VETERINARY COLLEGE

There were 23 students in attendance, as against 17 in 1897–98 and 11 in 1896–97. The steady growth in numbers in this College is gratifying evidence that high standards are appreciated in the veterinary profession. The requirements for admission are higher and the course after admission is longer than is the rule throughout the country, and it is encouraging to educators to find that this brings not adversity but prosperity to the institution.

Among the six who received the D.V.M. degree in June last were for the first time students who had taken the whole three years in this institution, and the effect of a high grade of scientific instruction from the start was shown in scholarship even higher than in previous classes, although, as noted in the Report of last year (p. 37), they reached a proficiency new in the annals of the profession.

The great desideratum of the State Veterinary College today is a sufficiency of funds and experts for entering more fully into the sanitary work of the State. Some of the most valuable work of the College may be done in the investigation on the spot of outbreaks of animal diseases, and a subsequent study in the laboratory of the tissues of the diseased animals. Unfortunately at present Professor Moore, upon whom this work devolves, cannot investigate cases of disease without leaving his classes for the time, nor remain with his class in the laboratory without omitting investigations which are both important to the animal industry of the State and to the expert seeking to advance scientific knowledge of the diseases. The remedy is plain, and, it is to be hoped, not far off. Already Dr. Kingsbury, formerly instructor in microscopy, histology, and embryology has been made assistant professor, and a number of laboratory assistants have been provided, but more funds are needed for further development of the College upon precisely the lines on which it can be most immediately useful to the State.

The gift of our lamented Chairman two years since has so far been used to create a Roswell P. Flower Veterinary Library of 1,210 books, and a number of pamphlets and to provide 34 periodicals on veterinary subjects containing the latest articles of interest to the profession. Coming as it does as a supplement to a collection of some 5,000 volumes on veterinary and kindred subjects formerly in the University Library, this gift from Mr. Flower places the New York State Veterinary College easily first in library resources, and it is to be noted that of his gift of $5,000, a balance of $2,118.94 is still held in reserve. First recommended by him, as governor, to the legislature of the State of New York, the State Veterinary College must stand to posterity as the most notable monument and memorial to that foreseeing statesman and large-hearted man.

For further information concerning the State Veterinary College, and more particularly for details regarding its several departments, see the report of the Director (Appendix VI, pp. XLI–XLVI).

THE COLLEGE OF ARCHITECTURE

The number of students in the College of Architecture was 48. The course and method of instruction described in the Report for 1896–97 (pp. 45–46) have now been in operation two years, and have fully justified themselves. The public exhibitions and criticisms of the students' work have continued to be an interesting and stimulating feature. The

Faculty are to be congratulated upon arousing in the student body an intense zeal and devotion to their work which has already accomplished wonders. The year just closed has seen the establishment of new courses in working drawings under Professor Martin, on the history of art by Professor Brauner, and on clay and building stones by Dr. Heinrich Ries, which have, each in its way, distinctly strengthened the work of the College, as also have addresses on various professional subjects by several well known architects from other cities. The exhibitions of student drawings in New York, Philadelphia, Chicago, and St. Louis have been useful in bringing the College more closely into touch with the profession throughout the East and central West.

An important departure has been made in the appointment of the first winner of the traveling fellowship in architecture described in the last Report (p. 39). Mr. William Herbert Dole, B.S. in Arch., 1894, the appointee, member of a family made distinguished by his uncle, the former President of the Hawaiian Republic, has given evidence of unmistakable architectural talents. His two-year term as fellow cannot fail to be of advantage alike to himself and to the undergraduates who will have the example of his work before them. He has been engaged so far on the problem of a College of Fine Arts for Cornell University.

Such a College as Mr. Dole has designed is most earnestly to be desired, contributing as it would not only to the benefit of the College of Architecture but to the general culture of the whole University. The students of architecture more than others need the inspiration of galleries of painting and sculpture, especially as Ithaca is remote from the art centres of the country. In spite of limited facilities and cramped quarters the instructors and students in architecture have worked with remarkable enthusiasm and achieved results which have won recognition for the College in many parts of the country. There is now urgent need of larger and better lighted draughting and modelling rooms, and more of them.

For further details regarding the work of the College of Architecture, reference must be made to the report of the professor in charge (Appendix VII, pp. XLVI–L).

THE COLLEGE OF CIVIL ENGINEERING

The number of undergraduates enrolled in the College of Civil Engineering was 185. For the five preceding years the numbers were: 116 in 1893–94, 122 in 1894–95, 121 in 1895–96, 150 in 1896–97, and 179 in 1897–98. The sudden increase in attendance after 1895–96 might plausibly be attributed to the haste of students to avoid the severer entrance requirements announced as going into effect in the fall of 1898. But the persistence of the increase after the requirements took effect is not so explicable, and makes it probable that the whole upward movement is due to other causes. It is noteworthy that the effect of the higher standard of admission last fall was, as expected, to cut down the size of the freshman class, but this expected reduction was more than offset by an unprecedented number of students from other institutions admitted to advanced standing here. Of course the mere fact that the requirements for admission to the Cornell College of Civil Engineering are more advanced than those of other schools of the profession throughout the country makes its degree professionally more valuable, and consequently more attractive to students, and the forward movement may result, not in a reduction, but in a permanent enlargement of the attendance. The further advance in entrance requirements described in the Report for 1897–98 may be expected to reduce still more the size of the freshman classes, and to increase this present tendency of other technological schools to become feeders of Cornell. There are many disadvantages in leading the way educationally, but it is deserving of question whether there are not always advantages more than compensating.

Meanwhile, as pointed out by Director Fuertes in his report (Appendix VIII, p. LII), the application of candidates for admission to advanced standing from numerous institutions with whose standards we were previously not familiar has led to some confusion and doubt as to the precise amount of credit to be given in each case. If, however, this temporary drain from other colleges becomes a steady flow, experience will soon show how thorough and how extensive is the work done in those institutions, and the present difficulties will disappear, as in the case of other regular feeders of the University.

The first year's work in the new hydraulic laboratory has now been completed. As was expected, its unique possibilities have been promptly recognized. The United States Deep Water Ways Commission has the record of being the first department of the Government to take advantage of the opportunity of throwing new light upon hitherto obscure problems, and has, under the supervision of Professor Williams for the College and of Engineer George W. Rafter for the Commission, carried on an extensive investigation of the flow of water over weirs. Other problems have been referred to the laboratory for solution sufficient in number and extent to tax it to the full for the next five years.

The scope of the instruction given was during the year extended by two courses delivered by experts not hitherto connected with the Faculty. The first course, by Mr. E. T. Turner, covered the relations of meteorology to certain classes of engineering designs and sanitary problems, utilizing data gathered at this University in the course of investigations covering the last twenty-six years. The second course, by Mr. Frank W. Skinner of the Engineering Record, bore about the same relation to a curriculum of civil engineering that a course in procedure does to a curriculum of law. The information given in it is usually prized by the possessor as "experience" and but sparingly communicated to others. Its inclusion in the course here is new to the teaching of the profession, and is a very promising departure.

Details of the work of the College will be found in the report of the Director (Appendix VIII, pp. L-LV).

THE SIBLEY COLLEGE OF MECHANICAL ENGINEERING AND MECHANIC ARTS

The total number of students enrolled in the undergraduate courses of Sibley College was 501, of whom 40 were college graduates. The corresponding figures for last year were 467 and 28. A comparison shows that the force of the increase in scope and difficulty of entrance requirements has at last spent itself. After slowly declining in numbers for four years the attendance has, with a sudden rebound, resumed its old and normal rate of growth. In no year between 1893–94 and 1898–99 was the attendance as large as in the last named year, and in the whole history of Sibley College only 1892–93 and 1893–94 show larger enrollments; while it is of course true that the undergraduate classes were never even approximately so rich in the most promising class of students, those who have completed a college course before beginning work in Sibley. It seems probable that 1899–1900 will see the old maximum enrollment equalled, and not improbable that it will find it surpassed.

This brings before the Trustees the old question of providing for the expansion which seems to be normal and perpetual with Sibley College. The elevation of entrance standards was undertaken largely to relieve the pressure for space in laboratories, shops, draughting rooms, and lecture rooms. And now in less than a half dozen years the old problem has returned, and a new solution must be found.

Moreover new needs have arisen. The year has seen the inauguration of the graduate school of railway mechanical engineering under Professor Herbert Wade Hibbard. In no other new department in years, probably, have the profession shown such a keen interest. Twenty-two students took the courses, and upon receiving their degrees at once began work in positions on seven of the great railway systems of the country, and two of the great manufactories of railway stock. The demand for these specially trained men is very keen, and a large number of freshmen, sophomores, and juniors have spent the summer in railway shops preparatory to taking Professor Hibbard's courses in 1899–1900. The department is one that needs large space for illustrative materials, draughting tables, etc., and even with the small attendance of the first year it was badly hampered by close quarters. The limit to the growth of this department is not in sight and prompt steps must be taken to provide for its necessities.

Meanwhile it is crowding the older departments of Sibley College, which will surely share its growth. As pointed out by Director Thurston in his report (Appendix IX, p. LX), while valuable gifts from manufacturers and friends continue to add to the equipment of Sibley College, they do so unsymmetrically and irregularly, and cannot be depended upon to help always where the need is greatest. The remedy is not to be found in the erection of one new laboratory, nor of two, nor in the expenditure of a lump sum to buy equipment pressingly needed to-day. The only effective remedy is an endowment fund which will yield an annual income sufficient to provide, not one year, but year after year, for the ever new and ever increasing needs of Sibley College.

This endowment need not take the form of one large sum given by a single person to endow the whole College. Some one of those railroad men who so keenly appreciate the important services of the graduate school of railway mechanical engineering must surely be willing to return to the department some measure of the benefit conferred by it upon the profession. Some of the great shipbuilding firms who profit by the scientific proficiency of the men trained in our graduate school of marine engineering and naval architecture may well invest here a sum of money calculated further to develop and extend the usefulness of this department. And similarly the departments of experimental engineering, electrical engineering, and mechanic arts have the strongest claims upon the generosity of the profession they serve so faithfully and so brilliantly. Cornell University has never failed to find a friend in time of need ; let us hope that this good fortune is once more to be illustrated. It should only be necessary to let it be known that the need and the opportunity are now at hand.

The report of the Director (Appendix IX, pp. LVI–LXII) contains interesting details respecting the work of the College.

THE NEW YORK STATE COLLEGE OF FORESTRY

The College of Forestry, which owes its existence to the bounty of the State of New York, began its first year last September. It was not supposed that many students would enter the College until the profession of forester becomes more firmly established in America, nor did it seem desirable to encourage large numbers to do so by any extensive notice of the establishment of the College. Seven students registered, however, in the freshmen, sophomore, and junior years of the regular four-year course and the attendance upon classes in the College from other departments brought the class rolls up to totals of 31, 35, and 15 in the fall, winter, and spring terms, respectively. The instruction during the spring and summer was given on the demonstration area at Axton in the Adirondacks.

The Faculty of Forestry has been strengthened for the coming year by the appointment of Professor Gifford (see p. 11).

A demonstration area comprising 30,000 acres of Adirondack forest was, with the consent and under the direction of the Forest Preserve Board, bought by the Board of Trustees, as provided for by the act establishing the College. The tract is located near Tupper Lake Station on the Mohawk and Malone division of the New York Central.

It contains a 200 acre farm with a boarding house, farm buildings, cottages, store, post office, and telephone connections. About one half the forest is virgin timber and the rest nearly intact. The transfer of the property was not made until April 1st, and the forest survey is not yet completed upon which must be based the working plans for the management of the forest. A preliminary estimate, however, involves the logging of several million feet of logs, the cutting and marketing of a large amount of cord-wood, and the planting of an area which has been burned and cut over. This work has been already begun by planting fifty acres with white pine and other conifers, and the establishing of a nursery expected to furnish from two to three million seedlings. A very dry summer caused numerous fires and kept the force on the tract busy fighting them. One fire burned over a tract of 900 acres, mostly bog land, fortunately, despite a force of one hundred men who contested the ground. The management of the forest when a sufficient survey renders it possible to work out a systematic plan, will provide against such fires in the future.

It will be seen from the above statement that the College of Forestry, in spite of the delay in the acquisition of the most important part of its material equipment, the Adirondack tract, has accomplished a large amount of work and justified the policy of the State in its establishment and maintenance. For the latter purpose the State appropriated $10,000, which sum has been devoted for the present year to the use of the College alone. A further sum of $30,000 was appropriated by the State for the work in connection with the College forest.

Besides the special provision made by the State, the University has placed at the disposition of the College its various departments of instruction, and has also provided quarters for the work done at Ithaca. For reasons mentioned more fully under the section on the Academic Department it has not been possible to provide an adequate and suitable home for the College of Forestry. At present there is no space for museum purposes, or for the storing of illustrative material, while the professors are obliged to share the lecture rooms of other departments, a fact which renders the economical and convenient arrangement of hours difficult if not impossible.

The State in assigning the use of the Adirondack tract to the University for thirty years would seem to contemplate provision for the support of the College for that period at least, and there is every reason to suppose that long before that time the economic results achieved by the College will fully justify its permanent existence. As the University itself reaps no financial benefit from the College, it would seem that the State might properly furnish a building for the use of the College of Forestry, planned to respond to the future expansion of the department, and constituting either an independent structure or a division of the edifice recommended in the section on the College of Agriculture.

The report of the Director (Appendix X, pp. LXV–LXVIII) contains interesting details of the year's work.

THE MEDICAL COLLEGE

The Medical College in New York City, whose foundation was described in the Report of the President for 1897–98, pp. 45–51, opened on the 4th of October with 278 students, of whom 26 are women, and a staff of 71 instructors. Just as Cornell University in the first year of its existence attracted students from other universities and colleges, so the Medical

College opened with classes in each of the four years of the course and graduated at the first annual Commencement on the 7th of June, 1899, 67 students, of whom 11 were women. The size of the various classes was as follows : first year 104, second year 79, third year 77, fourth year 12, and 6 taking special courses.

The staff of instruction has already been described in the Report of 1897–98, and the additions since then are indicated in the present Report under the head of the Faculties.

Pending the completion of the spacious building now in course of erection on First Avenue opposite Bellevue Hospital, the College has occupied a building in the grounds of Bellevue Hospital. Some inconvenience has been caused by the lack of space in these temporary quarters, and the work of the College cannot be fairly judged until it is installed in its permanent home. In spite of the above drawback and the difficulties naturally attending the inauguration of any great enterprise, the work of the year has been satisfactory and the new College has prospered. It has indeed not yet attained the ideal of its generous and far-sighted Founder ; but the Faculty is striving for its attainment ; and the assurance of ultimate success lies not less in their own ability, devotion, and united loyalty than in the splendid facilities for work which the Founder's munificence is steadily supplying.

In his report for the year the Dean of the Medical Faculty, Dr. W. M. Polk, recommends the establishment of a "Department of Hygiene suitable in every way to the demands of public health and in keeping with the ideals of the School." The general plan for such a department was submitted to the Trustees and approved by them, and it is the intention of the Medical College to put it into operation at once.

In the last Report of the President (1897–98, pp. 47–49) the relations of the Medical College in New York to the University in Ithaca, so far as the curriculum is concerned, were described and the plan was outlined by which students in the latter place could complete two years of the Medical Course while members of the Academic Department. This plan involved a duplication at Ithaca of the first two years of the course, and during the past year this Medical Course, so far as the instruction of the first year was concerned, was opened to students. A room in White Hall was fitted up for anatomy and dissection and the remainder of the work was provided for in the usual courses of University instruction.

It was estimated that twenty would enter the first year of the Medical Course ; as a matter of fact forty were actually registered. In providing for the work of next year it has been estimated that fifty new students will enter the Medical Course at Ithaca and that thirty-five will continue from last year. This number even will severely tax the present resources of the University and provision should at once be made for the natural growth of the College at Ithaca. A building devoted exclusively to the Medical College is a necessity in the near future. It will be impossible to increase the space now devoted to anatomy and dissection in White Hall, and more commodious laboratories for bacteriology and pathology are urgently needed.

The necessary provisions for the work of the second year have been made. The dissecting room in White Hall has been enlarged, a laboratory for physiological chemistry has been equipped in Morse Hall, additional apparatus for the study of bacteriology, pathology, pharmacology, etc. has been purchased, and the staff of instruction increased by several appointments.

There is every reason to suppose that the number of students taking the first two years of the Medical Course at Ithaca will rapidly increase. Under the present arrangement all women are obliged to take these two years at Ithaca and the excellent facilities afforded here for general scientific instruction as well as the attractiveness of University life will undoubtedly draw many. In view of this fact some provision should be made at once to relieve the University of the overcrowding of its courses and of the expense attending the increase in equipment and staff of instruction rendered necessary by the duplication of the first two years of the Medical Course at Ithaca.

For details of the year's work in the Medical College, consult the report of the Director (Appendix X, pp. LXIII-LXV).

SAGE COLLEGE

The number of women residing in University halls, under the supervision of the Warden of Sage College, varied from 163 in the fall term to 155 in the spring. Of these about 130 lived in Sage College, and about 30 in the Sage College Cottage. As a result of a recommendation to students before entrance, a large proportion of the women spent their freshman year in Sage College, the number being 51 as against 28 in the year previous.

The social life of Sage College, as is said by the Warden (Appendix XIII, p. LXXV), centres in the drawing room and the gymnasium. Quite aside from entertainments, the residents in Sage College use the gymnasium nightly for dancing. On Friday evening the gymnasium has been set aside for entertainments such as class dances and fraternity dances. The Dramatic Club and literary societies have by their entertainments added variety to the social life of the women, and a women's glee club is considered desirable. In the drawing room there has been music on Sunday evenings. But the social feature of the year is to be found in the receptions to Trustees, Faculty, and students of the University, for which an appropriation was made by the Trustees.

The physical welfare of the students has been promoted alike by the flourishing condition of the Sports and Pastimes Association, which is now incorporated under the laws of the State of New York, and the Infirmary, where slight indispositions as well as serious illnesses have received attention. Tennis, basket ball, swimming, and rowing have all been popular, and $1,000 has been raised by friends of Sage College for the erection of a women's boathouse, which those in charge of the funds desire to erect upon the shores of the artificial lake above Triphammer Falls.

Interesting details regarding the year in Sage College will be found in the report of the Warden (Appendix XIII, pp. LXXIV–LXXVIII), whose administration of Sage College has won unstinted praise from everybody at Cornell, and deserves the recognition of all friends of co-education.

THE LIBRARY

The report of the Librarian (Appendix XV, pp. LXXXVIII–XCII) shows that during the year ending July 31st, 1899, there were added to the general library 12,456 volumes, of which 3,300, or a little more than 26 per cent, came as gifts. The law library was increased by 1,058 volumes, and the Flower Veterinary Library by 230, while a new collection of 415 volumes on forestry has been formed. The present extent of the University collections is 225,022 volumes and 36,600 pamphlets. Of this total 196,260 volumes are in the general library and 27,562 in the law library.

The Library is fortunate in having many constant friends. The largest gifts of the year are from ex-President White, 866 volumes added to the White Historical Library ; Professor Hart, 318 volumes, comprising first editions of Byron, and works in Celtic literature and civil law ; and Theodore Stanton, '76, 130 volumes, including a Dreyfus collection. All these names as well as that of Professor Fiske, who has added 81 volumes to the magnificent Dante collection presented by him, are to be found annually in the list of benefactors of the Library. Other important gifts noted in the Librarian's report are from the Wyclif Society, the Cornell Catholic Union, Mrs. M. Linton Matthews, the National and State Governments, the Toronto Public Library, and the British and Canadian Patent Offices.

The great Sage endowment fund is as ever the main source of the Library's growth. A number of the more costly and important works purchased from the income of this fund are mentioned in the Librarian's report (Appendix XV, p. LXXXIX), but it is the principal reliance of all departments of University study, and justice cannot be done it in any report.

The gift of our lamented Chairman, the late Roswell P. Flower, continues to aid in enlarging and perfecting the veterinary collection. The greatest desideratum of the Library to-day is a similar gift of $75,000 to $100,000 for the endowment of the law library, to which constant growth and progress are an absolute necessity.

The receipts during the year from the sales of The Warfare of Science, devoted by Mr. White to the increase of the historical collection which bears his name, have been $1,448.50, a sum only a few dollars less than that turned over to the Library from this source in 1897–98. Most of it has already been expended, chiefly upon the general history of civilization, the history of the French Revolution, and the local history of France.

The general library was open for use 308 days during the year and until eleven P. M. on 168 evenings. The recorded use of the Library—which, owing to the constant utilization of the very large collections on the reference shelves, of which no record is kept, is doubtless much smaller than the unrecorded use—was 112,423 volumes, which is larger than the whole Library was at the time of the election of the present President of the University in 1892. There was a gain of 9,000 volumes in recorded use over the figures reported in 1898, and of more than 78,000 (232 per cent !) over the figures for 1892. The growth of the student body during the same period of seven years, if we exclude medical students attending classes in New York City, and consequently not sharing in this use of the Library, is only 16 per cent. The Library itself has more than doubled, containing 225,022 volumes as against only 111,007 in 1892, but this is insufficient to explain the more than trebling of its use. Presumably the explanation is to be sought chiefly in changed habits of study on the part of the student body, which in turn may be credited to the same cause as the slowness in growth of attendance, namely to the more advanced scholarship now exacted of candidates for admission. Whatever the cause, a Library rapidly increasing in size and still more rapidly in use is strong evidence of vital energy and expanding life in the University.

SAGE CHAPEL

The extensive alterations in Sage Chapel as outlined in the last Report (see Report for 1897–98, p. 55) have been completed, with the exception of the decoration of the apse, and the enlarged edifice was opened on January 8th by the Rev. Joseph H. Twichell, of Hartford, Connecticut, whose sermon contained an impressive eulogy of the character of Henry W. Sage, by whose liberality the Chapel was originally constructed. Since the above date the Chapel has been open for religious service twice on each Sunday, and, when there has been a clergyman in residence, a brief service has been held on Thursday afternoons. In addition to this an organ recital has been given every afternoon except Saturday, with a more elaborate programme on Thursdays, and the Chapel has been open all day to those who wished to visit it for repose and meditation.

The musical services have been greatly improved under the direction of the Ithaca Conservatory of Music and music of a high order has been rendered by orchestra and chorus composed of students and pupils of the Conservatory. The great interest manifested by the students in these services, as well as in the University lectures on music during the year, has been most gratifying and shows what an important part music may be made to play in the general culture of the students.

The decoration of the apse is progressing and sufficient has been accomplished to give an idea of the beautiful character of the work.

The importance of the enlarged Chapel as a centre of religious influence and of refining and elevating culture can not be too highly estimated. For the first time in many years the Baccalaureate Sermon was preached within its walls, June 18th, and no one who was present will forget the solemn nature of the service, and the sense of relief that it was no longer necessary to use the Armory for that occasion.

THE INFIRMARY

The Infirmary opened on September 30th, fully equipped for receiving patients, with a well regulated staff consisting of superintendent, who is a trained nurse, an additional trained nurse, and one probationer. Where this staff has not sufficed, other nurses have been temporarily engaged.

During the year 184 patients, 16 of whom were women, have been admitted to the Infirmary. The average daily number of patients was 6, the maximum number 14. The cases embraced the usual types of illness, such as grippe, tonsilitis, bronchitis, mumps, etc.

A large proportion of cases required minor surgical treatment, and in eight cases major operations were performed.

There were two deaths ; one due to Bright's disease, aggravated by conditions arising after an operation for appendicitis, the other from cerebral meningitis.

Details as to the cost of management, and income from endowment and patients will be found in the Treasurer's report.

In view of the comfort and relief afforded a large number of patients, many of them suffering from serious illness, it is difficult to realize that for so many years no provision was made for this purpose, and it is impossible to overestimate the beneficent results already arising from this splendid monument of filial affection and sympathy with humanity.

BUILDINGS AND GROUNDS

The year has seen the completion of the Chapel reconstruction, and of the addition to Morse Hall, which, as noted in the Report for last year (p. 58), practically doubles the space at the disposal of the department of chemistry. The new Medical College building which the munificence of Colonel Payne is erecting in New York City has been at a standstill, the steel famine having greatly retarded its progress.

Upon the Campus, under the direction of Professor Rowlee, the grounds around the enlarged Chapel have been graded and planted with shrubbery and with very handsome beds of begonias and other flowering plants, paths have been laid out from Barnes Hall and from Lincoln Hall to the Library, and an experimental section of macadam roadway has been constructed on East and South Avenues. The extension of the system of beds of flowers upon the Campus calls for somewhat more extensive facilities for propagating and wintering the stock.

Appended to this Report are, this year, sixteen Appendices giving details concerning the work of the various Departments and Colleges, of Sage College, and of the Library. Appendix XIV gives tables of degrees granted, methods of entrance of students, colleges and universities from which students have transferred to the undergraduate courses of this University, and other matters of record. There is also given (Appendix XVI) a list of publications during the year by the University and its officers which is an interesting gauge of the humanistic and scientific activities of the University. To these the Trustees are referred for further information.

J. G. SCHURMAN
President

T. F. CRANE
Acting President

APPENDIX I

CHANGES IN THE STAFF OF INSTRUCTION

The following changes were made in the staff of instruction for the year 1898-99, the appointments to take effect, unless otherwise stated, at the date of appointment:

T. F. Crane, Acting President, from January 23, 1899, until September, 1899.
J. Seth, Acting Professor of Moral Philosophy for spring term, 1899, October 29, 1898.
M. V. Slingerland, Assistant Professor of Economic Entomology, January 3, 1899.
J. S. Ferguson, Instructor in Histology, September 27, 1898.
H. E. Dann, Instructor in Music, resigned, September 27, 1898.
O. M. Stewart, Instructor in Physics, *vice* C. D. Child, resigned, September 27, 1898.
F. O. Bates, Instructor in Greek for fall term, *vice* L. L. Forman, ill, October 11, 1898.
T. Whittlesey, Instructor in Chemistry, *vice* C. H. Benedict, resigned, October 11, 1898.
C. R. L. Putnam, Instructor and Assistant Demonstrator in Physiology during the illness of J. A. Hartwell, November 19, 1898.
A. E. Tuck, Instructor in Military Science and Tactics, in charge of the department September 13, 1898.
G. H. Shepard, Instructor in Machine Design, *vice* T. Hall, resigned, September 13, 1898.
O. Schultze, Instructor in Pathology, appointment to date from October 4, November 22, 1898.
W. E. Griffith, Instructor in Butter Making for three months from January 1, 1899, November 29, 1898.
J. Fraenkel, Instructor in Diseases of the Nervous System, November 29, 1898.
H. Diederichs, Instructor in Experimental Engineering, *vice* A. H. Eldredge, resigned, appointment to take effect February 15, February 7, 1898.
W. A. Gordon, Instructor in Experimental Engineering, *vice* B. S. Lanphear, resigned, April 11, 1899.
E. T. Turner, Lecturer in Meteorology, September 13, 1898.
L. Neumann, Assistant to the Chair of Physiology, September 27, 1898.
C. H. Blood, Lecturer in the College of Law, September 27, 1898.

E. Blaker, Assistant in Physics, *vice* O. M. Stewart, promoted, September 27, 1898.

F. G. Scammel, Demonstrator in Anatomy, *vice* R. J. Stanclift, term expired, September 27, 1898.

D. C. Knowlton, Assistant in English, October 11, 1898.

F. A. Richmond, Assistant in Chemistry, *vice* G. P. Knox, resigned, October 25, 1898.

F. F. Russell, Assistant to the Professor of Mental Diseases, October 25, 1898.

C. T. Horton, Assistant in Elocution and Oratory, *vice* H. L. Powers, not reported for duty, October 25, 1898.

G. M. Dutcher, Assistant in English History, November 1, 1898.

I. C. Sheldon, Assistant in Architecture, appointment to date from the beginning of the year, November 8, 1898.

A. H. Sweet, Mechanician in Sibley College, *vice* W. F. Raymond, resigned, November 15, 1898.

H. D. Illston, Demonstrator of Veterinary Anatomy, for year 1898–99, November 15, 1898.

J. C. Johnston, Demonstrator of Pathology, appointment to date from October 4, November 22, 1898.

L. J. J. Muskins, Demonstrator of Pathological Histology, appointment to date from November 18, November 22, 1898.

J. Rogers, jr., Instructor in the Special Hospital Quiz, appointment to date from November 1, November 22, 1898.

W. R. Williams, Instructor in the Special Hospital Quiz, appointment to date from November 1, November 22, 1898.

G. D. Lombard, Demonstrator of Histology, appointment to date from October 4 for term of ten months, November 22, 1898.

H. Pascal, Demonstrator of Histology, appointment to date from October 4 for term of ten months, November 22, 1898.

R. S. Adams, Clinical Assistant in Diseases of Children, appointment to date from the beginning of the year, November 29, 1898.

R. M. Daley, Clinical Assistant in Diseases of the Nervous System, appointment to date from the beginning of the year, November 29, 1898.

M. R. Ebersole, Assistant in Chemistry, *vice* T. Whittlesey, promoted, appointment to take effect Nov. 15, Nov. 22, 1898.

A. Lefevre, Lecturer in Philosophy, January 13, 1899.

A. B. Gould, Assistant in Experimental Engineering, *vice* H. Diederichs, promoted, Feb. 7, 1899.

H. Hasselbring, Assistant in Botany, *vice* W. A. Murrill, transferred to Nixon Fund work, Feb. 7, 1899.

J. Rogers, Jr., Secretary of the Faculty of Medicine, September 27, 1898.

J. T. Wilson, Clerk of the Medical College, September 27, 1898.

Augusta Reddington, Nurse in the Infirmary, October 25, 1898.

Miriam A. Snaith, Assistant Nurse in Infirmary, October 25, 1898.

Josephine Dickson, Superintendent of the Infirmary, *vice* Matron Margaret Rathbun, resigned, to take effect January 1, 1899, December 23, 1898.

Jessie P. Anderson, Stenographer and Typewriter in the office of the Medical College, January 24, 1899.

W. A. Murrill, Assistant Cryptogamic Botanist in connection with Nixon Fund work, appointment to take effect March 15, 1899, February 7, 1899.

Rose A. McAllister, Assistant to Registrar, resigned April 1, 1899.

The following changes have been made in the staff of instruction, the appointments to take effect, unless otherwise stated, at the beginning of the year 1899-1900.

E. B. McGilvary, Sage Professor of Moral Philosophy, *vice* J. Seth resigned, March 4, 1899.

J. Ewing, Professor of Pathology, June 21, 1899.

B. I. Wheeler, Professor of Greek and Comparative Philology, resigned, July 19, 1899.

W. Strunk, Jr., Assistant Professor of Rhetoric and English Philology, March 14, 1899.

A. Fairbanks, Acting Assistant Professor of Ancient and Mediæval Philosophy, *vice* W. A. Hammond, absent on leave, April 18, 1899.

J. Gifford, Assistant Professor of Forestry and Curator of Collections, May 2, 1899.

B. F. Kingsbury, Assistant Professor of Microscopic Methods, Histology, and Embryology, promoted, May 9, 1899.

H. H. Powers, Acting Assistant Professor of Social Science, *vice* W. F. Willcox, absent on leave, May 23, 1899.

P. R. Brown, Lecturer in Surgery, Obstetrics, and Medicine, May 29, 1899.

G. D. Chase, Assistant Professor of Comparative Philology, August 8 1899.

C. Norris, Instructor in the Pathology of Nervous Diseases, May 2, 1899.

H. R. Carveth, Instructor in Chemistry, *vice* F. L. Kortright, term expired, May 9, 1899.

K. M. Wiegand, Instructor in Botany, promoted, May 9, 1899.

G. N. Lauman, Instructor in Horticulture, promoted, May 9, 1899.

J. M. Woodbury, Instructor in Orthopedic Surgery, May 17, 1899.

J. Aspell, Clinical Instructor in Gynæcology, May 17, 1899.

W. Shannon, Clinical Instructor in Children's Diseases, May 17, 1899.

G. P. Shears, Clinical Instructor in Obstetrics, May 17, 1899.

F. M. Stephens, Clinical Instructor in Otology, May 17, 1899.

F. Noe, Instructor in Machine Design, *vice* J. H. Barr, absent on leave, May 17, 1899.

J. A. Winans, Instructor in Elocution and Oratory, *vice* E. D. Shurter, term expired, May 23, 1899.

C. M. Mix, Instructor in Anatomy, May 23, 1899.

F. R. Wright, Instructor in Bacteriology, promoted, May 23, 1899.

E. M. Chamot, Instructor in Toxicology, May 23, 1899.

T. M. Gardner, Instructor in Experimental Engineering, *vice* W. A. Gordon, term expired, June 13, 1899,

C. N. Cole, Instructor in Latin, July 11, 1899.

C. C. Major, Instructor in Experimental Engineering, *vice* G. B. Preston, term expired, September 14, 1899.

A. C. Phelps, Instructor in Architecture, *vice* E. B. Higby, term expired, September 14, 1899.

O. A. Johanson, Instructor in Civil Engineering, September 19, 1899.

R. C. Brooks, Assistant in Political Economy, and N. A. Weston, Assistant in Political Economy, *vice* Instructor C. J. Bullock, term expired, May 9, 1899.

J. F. Clark, Assistant in Botany, *vice* B. M. Duggar, term expired, May 9, 1899.

H. M. Archer, Clinical Assistant in Surgery, May 17, 1899.

G. S. Dixon, Clinical Assistant in Otology, *vice* C. C. Jones, term expired, May 17, 1899.

M. G. Schlapp, Clinical Assistant in Diseases of the Nervous System, May 17, 1899.

W. A. Riley, Assistant in Entomology, May 17, 1899.

G. A. Everett, Assistant in Elocution and Oratory, *vice* C. T. Horton, term expired, May 23, 1899.

F. H. Hausner, Assistant in Elocution and Oratory, *vice* H. C. Allen, term expired, May 23, 1899.

W. F. Mercer, Assistant in Microscopy, Histology, and Embryology, *vice* C. M. Mix, promoted, May 23, 1899.

C. F. Flocken, Assistant in Microscopy, Histology, and Embryology, May 23, 1899.

S. H. Burnett, Assistant in Pathology, May 23, 1899.

Edith J. Claypole, Assistant in Physiology, May 23, 1899.

R. M. Vose, Assistant Demonstrator in Physiology and Materia Medica, May 23, 1899.

J. E. Teeple, Assistant in Physiological Chemistry, May 23, 1899.

G. W. Stewart, Assistant in Physics, May 29, 1899; R. B. Blakeslee, Assistant in Physics, May 29, 1899, and R. R. Ramsey, Assistant in Physics, June 13, 1899, *vice* Instructors C. H. Sharp and C. E. Timmerman, term expired.

C. R. Perkins, Assistant in Operative Surgery and Obstetrics, June 6, 1899.

E. S. Smith, Assistant in Chemistry, *vice* O. W. Brown, term expired, June 6, 1899.

F. D. Colson, Assistant in Procedure, July 11, 1899.

E. M. Avery, Assistant in Machine Shop, *vice* C. L. Stanton, term expired, September 19, 1899.

G. G. Smith, Assistant in Civil Engineering, September 19, 1899.

Rose M. Clark, Assistant to the Registrar, May 17, 1899.

R. J. Moore, Assistant in the Law Library, *vice* F. H. Hausner, term expired, June 13, 1899.
D. C. Knowlton, Assistant in Reference Library, *vice* H. J. Gerling, resigned, September 19, 1899.
Alice G. McCloskey, Assistant in Nature Study (for five months), May 9, 1899.
S. W. Fletcher, Assistant in Nature Study (for four months), May 9, 1899.
H. P. Gould, Spraying Expert, resigned, August 8, 1899.

The following appointments were made for the Summer Session, 1899:

C. DeGarmo, Dean of the Faculty, and Professor of the Science and Art of Education, November 8, 1898.
G. P. Bristol, Professor of Greek, November 8, 1898.
C. E. Bennett, Professor of Latin, November 8, 1898.
H. S. White, Professor of German, November 8, 1898.
T. F. Crane, Professor of French, November 8, 1898.
E. B. Titchener, Professor of Psychology, November 8, 1898.
J. W. Jenks, Professor of Civics, November 8, 1898.
G. L. Burr, Professor of History, November 8, 1898.
L. A. Wait, Professor of Mathematics, November 8, 1898.
G. W. Jones, Professor of Mathematics, November 8, 1898.
G. F. Atkinson, Professor of Botany, November 8, 1898.
R. S. Tarr, Professor of Physiology and Physical Geography, November 8, 1898.
I. P. Roberts, Professor of Nature Study (On the Farm), November 8, 1898.
L. H. Bailey, Professor of Nature Study (Plant Life), November 8, 1898.
J. M. Hart, Professor of English, November 15, 1898.
P. A. Fish, Assistant Professor of Physiology, November 8, 1898.
G. W. Herrick, Assistant Professor of Nature Study (Insect Life), November 8, 1898.
Anna B. Comstock, Assistant Professor of Nature Study (Insect Life), November 8, 1898.
F. C. Prescott, Assistant Professor of English, November 15, 1898.
J. H. Tanner, Assistant Professor of Mathematics, *vice* Professor G. W. Jones, resigned, June 13, 1899.
E. W. Olmsted, Assistant Professor of French, June 13, 1899.
I. M. Bentley, Instructor in Psychology, November 8, 1898.
J. S. Shearer, Instructor in Physics, November 8, 1898.
F. J. Rogers, Instructor in Physics, November 8, 1898.

H. Ries, Instructor in Geology and Physical Geography, November 8, 1898.
H. S. Gutsell, Instructor in Drawing, November 8, 1898.
C. S. Northup, Instructor in English, November 8, 1898.
D. A. Murray, Instructor in Mathematics, November 15, 1898.
F. L. Kortright, Instructor in Chemistry, November 15, 1898.
B. S. Cushman, Instructor in Chemistry, November 15, 1898.
T. Whittlesey, Instructor in Chemistry, November 15, 1898.
J. S. Reid, Instructor in Mechanical Drawing, November 15, 1898.
G. A. Miller, Instructor in Mathematics, December 6, 1898.
Mary A. Nichols, Instructor in Nature Study (Insect Life), June 21, 1899.
G. N. Lauman, Instructor in Nature Study (Plant Life), June 21, 1899.
Four Foremen in Sibley College for Shopwork, November 8, 1898.
H. Hasselbring, Assistant in Botany, November 15, 1898.
L. A. Clinton, Assistant in Nature Study (On the Farm), June 21, 1899.
J. L. Stone, Assistant in Nature Study (On the Farm), June 21, 1899.

Appointments in the Summer Session in the Cornell University Medical College were made as follows:

February 28, 1899,

W. M. Polk, Dean, Professor of Gynæcology and Obstetrics. Instructor in Gynæcology.
G. Woolsey, Professor of Anatomy and Clinical Surgery. Instructor in Surgical Diagnosis.
F. W. Gwyer, Professor of Operative and Clinical Surgery. Instructor in Surgical Diagnosis.
S. Alexander, Professor of Diseases of the Genito-Urinary System. Instructor in Diseases of the Genito-Urinary System.
F. W. Murray, Professor of Clinical Surgery. Instructor in Surgical Diagnosis.
A. Lambert, Professor of Clinical Medicine. Instructor in Clinical Medicine.
C. C. Barrows, Instructor in Gynæcology.
L. E. Lafetra, Instructor in Children's Diseases.
T. G. Lusk, Instructor in Dermatology.
J. E. Newcomb, Instructor in Diseases of the Nose and Throat.
N. Norton, Instructor in General Medicine.
O. Schultze, Instructor in Pathology.
W. Shannon, Instructor in Children's Diseases.
E. P. Shelby, Instructor in Pharmacology and Gross Pathology.
W. F. Stone, Instructor in Minor Surgery.
G. K. Swinburne, Instructor in Diseases of the Genito-Urinary System.
F. Taylor, Instructor in Minor Surgery.
B. Tilton, Instructor in Minor Surgery and Diseases of the Genito-Urinary System.

H. H. Whitehouse, Instructor in Diseases of the Skin.
G. R. White, Instructor in Gynæcology.
P. R. Bolton, Instructor in Surgical Diagnosis.
B. H. Buxton, Instructor in Bacteriology.
C. N. B. Camac, Instructor in Clinical Microscopy and Diseases of Heart and Lungs.
W. Coleman, Instructor in Clinical Medicine and General Medicine.
L. A. Conner, Instructor in Clinical Medicine and Gross Pathology.
M. J. Echeverria, Instructor of the Diseases of the Genito-Urinary System.
J. A. Hartwell, Instructor in Minor Surgery and Quiz Master in Surgery.
F. Hawkes, Instructor in Minor Surgery.
S. B. Ives, Instructor in Children's Diseases and Quiz Master in Materia Medica and Therapeutics.
J. E. Kenefick, Instructor in Diseases of the Nose and Throat.
W. Williams, Instructor in General Medicine and Quiz Master in Medicine.

P. Bailey, Instructor in Diseases of the Nervous System, March 7, 1899.
R. Bellamy, Instructor in General Medicine, March 7, 1899.
W. D. Bullard, Instructor in Surgery, March 7, 1899.
W. C. Gilley, Instructor in Minor Surgery, March 7, 1899.
C. E. Nammack, Instructor in Clinical Medicine, March 7, 1899.
L. W. Riggs, Instructor in Laboratory Chemistry, March 7, 1899.
F. P. Solley, Instructor in General Medicine, March 7, 1899.
J. Fraenkel, Instructor in Diseases of the Nervous System, March 7, 1899.
C. F. Adams, Instructor in Surgery, May 2, 1899.
F. Cabot, Instructor in Venereal and Genito-Urinary Diseases, May 2, 1899.
E. Conner, Instructor in Otology, May 2, 1899.
W. A. Dunckel, Instructor in Diseases of Children, May 2, 1899.
J. S. Ferguson, Instructor in Normal Histology, May 2, 1899.
A. H. Knapp, Instructor in Ophthalmology, May 2, 1899.
F. M. Stephens, Instructor in Otology, May 2, 1899.
G. G. Ward, jr., Instructor in Obstetrics, May 2, 1899.
A. S. Taylor, Instructor in Medical Diagnosis, May 2, 1899.

APPENDIX II

REPORT OF THE DEAN OF THE UNIVERSITY FACULTY

To the President of the University:

SIR:—I have the honor to submit my third annual report as Dean of the University Faculty. It will be convenient to arrange the subject matter of the report with reference to the work of the committees of which the Dean is *ex-officio* chairman, including also such functions as have been specially assigned to him by the Faculty.

I. ADMISSION BY CERTIFICATE

During the current year twenty-seven schools have been informed without comment that the work of certain students, who had been admitted by certificate from those schools, had not been uniformly satisfactory. This notification does not imply that the committee would necessarily bring into question the quality of the work done by the aforesaid students in such schools, or that the quality of the certificate upon which these students were admitted should be impugned. It may often happen that the preparation of the students is fully adequate, but there are various reasons, among which may be noted the distractions incident upon a change of surroundings, and the varied interests of university life, why there is not always, at the beginning of the University course, an entire devotion to study. In some cases the school authorities have felt that the blame for the poor work of their students at the University should be laid at the door of the University authorities rather than at their own. Before an intimation, therefore, is given to a school that the question of further considering its certificates should be raised, the committee examines each case involved with considerable care. In a number of cases during the current year, however, the credit given by certificate in certain subjects at entrance was cancelled by the department in charge, as it clearly appeared from subsequent University examinations that the students concerned could never have acquired an adequate knowledge of those subjects.

One school was warned, on account of the almost uniformly poor record in all respects of the students recommended by it, that unless there should be an improvement in the records of any new students recommended by said school on certificate, the certificate privilege would be promptly withdrawn.

The operation of the elective system during the past year does not seem to call for any present modification in the system of admission by certificate. In the report of the Dean of the Faculty of Arts and Sciences the satisfactory working of the greater freedom of election is fully detailed.

During the year the committee modified the regulations governing the consideration of certificates of admission to other colleges, as follows: The previous method had been to consider such certificates only where they covered substantially the entire entrance requirement in the institution at which the applicant had first applied for admission. A number of cases came before the committee, however, of persons who had taken the preliminary examinations at other institutions, and then had changed their plans and had determined to enter Cornell. It seemed a hardship to require such persons, who had already passed certain subjects elsewhere, to repeat the same examinations here, and the committee accordingly authorized the acceptance of certificates for examinations passed for entrance at Harvard, Yale, Columbia, University of Pennsylvania, Princeton, Bryn Mawr, and other colleges and universities of a high grade, under the same conditions as at Cornell, where our rule is that the record of such preliminary examinations holds good in case four subjects be satisfactorily passed. If credit is asked for the single subject of English, when passed at the institutions indicated, such cases are to be referred to the department concerned.

II. GRADUATE DEPARTMENT

After the changes and modifications recently adopted in the methods and procedure of the Committee on Graduate Work and Advanced Degrees, the current year illustrates little more than a record of progress.

Among the minor recommendations of the committee which were adopted by the Faculty, was one that a student who had failed to secure the baccalaureate degree last June, but who had met all the requirements for that degree by registration day in September, and was ready to begin graduate study at that date, be admitted as candidate for the Master's degree, although the baccalaureate degree had technically not been conferred. As a natural result, the candidate received in June of the present year the Bachelor's and the Master's degree at the same Commencement.

At the request of the chairman of the special committee of a candidate for the Doctor's degree, the committee was authorized to invite an outside examiner to take part in the examination on one of the minor subjects.

The question of graduate work in connection with the new Summer Session was debated with considerable interest during the year, and the following resolution of the committee on this subject was finally passed by the Faculty: "*Resolved*, That credit in time for graduate work done in the Summer Session, and properly accredited by the professor in charge of the subject concerned, be given on application, under the usual rules governing members of the Graduate Department; such credit in time to cover only the actual period of residence and attendance, and not to exceed one University year's allowance for the total amount of work so accomplished." This resolution would imply that it might be possible for a candidate to secure the Master's degree for work done during the Summer Session, if the special committee having in charge the work of the candidate should agree to be responsible for the same. The best method for securing the Master's degree in this way would be for the candidate to spend part of the requisite time in the Summer Session and part during the regular academic year. To obtain the Master's degree in this manner, six periods of the Summer Session, with its present length, would be necessary. One might, however, spend two Summer Sessions and two terms of the University in residence, or four Summer Sessions and one term. It would be necessary in every case to secure the co-operation of the members of the special committee concerned. The University, meanwhile, makes no engagements regarding the Summer Session save from year to year, as the appointments are annual, and as the relation of a professor to the work of the Summer Session is purely voluntary.

The regulation prescribing three years as a minimum period of residence for the Doctor's degree, which went into operation in 1898, may be reduced to a shorter period in special instances, in cases of exceptional proficiency. One form of reduction occurs by the acceptance of a year of graduate work done in a university elsewhere. This would leave a minimum of two years of residence, which could still further be reduced in rare cases by a special vote. To illustrate the operation of this rule, an application was received at the beginning of last year from a candidate for the Doctor's degree, for permission to come up for examination in the following June, after only one year's residence. The applicant had already spent several years in study at a German university, had nearly completed the required thesis, and was about to come up for his examination there, when a sudden emergency called him home. He was informed by the committee that if his work were satisfactory during the year he might present himself in June. In no case would the university pledge itself to accept in advance any specific amount of residence in satisfaction of the minimum period. The risk, therefore, if any risk be involved, is to be taken by the candidate, and not by the university; and this lowest minimum of one year's residence is to be granted only in very exceptional cases.

One of the most difficult questions presented to the committee concerns the treatment of applications for admission to the Graduate Department from graduates of agricultural colleges. The general standard of the other agricultural colleges in the United States is so much below the standard of the Agricultural College of Cornell University, that such applicants should be required to spend at least a year in making up the deficiencies of their previous course. This may be done either by entering the agricultural course at Cornell, and taking the regular Bachelor's degree in the College of Agriculture, or by doing such an amount of special work as would satisfy the college concerned. This strictness in dealing with such cases may be regarded as a national service, as it suggests and encourages the maintenance of a high standard for admission and graduation at agricultural colleges elsewhere. Many of these applicants are also persons of maturity, and since their own graduation have done a considerable amount of extra work, either in the way of teaching, or in connection with the various experimental stations. It has seemed right to the committee to allow this additional preparation to off-set the aforesaid deficiency, and to admit such applicants at once to the privileges of the Graduate Department. The minimum period of candidacy may, however, in such cases be somewhat extended.

The candidates for advanced degrees during 1892-99 were distributed as follows:

I. By degrees:	1892-93	'93-94	'94-95	'95-96	'96-97	'97-98	'98-99
A.M.	9	15	3	3	14	19	31
Ph. M.	2	6	3	6	—	—	—
M.L.	8	12	7	4	—	—	—
M.S.	33	23	13	15	11	11	10
M.C.E.	7	18	13	5	3	4	3
M.M.E.	31	48	36	18	10	11	12
Ph.D.	58	77	67	58	79	89	93
D.Sc.	19	31	31	22	16	11	6
Total	167	230	173	131	133	145	155

The change in distribution since 1896 is explained by the modification in the form of advanced degrees, by which the degrees of Ph.M., M.L., M.S., and D.Sc. are no longer available. A few earlier candidates for the degree of D.Sc. still prefer not to exercise the option afforded of changing to Ph.D.

II. By subjects (each minor counted separately); during 1892–99.

SUBJECT	MAJOR							MINOR						
	'92–3	'93–4	'94–5	'95–6	'96–7	'97–8	'98–9	'92–3	'93–4	'94–5	'95–6	'96–7	'97–8	'98–9
Semitic Languages	–	–	–	–	–	–	–	–	–	–	–	1	1	1
Greek Comp. Philol. (including Class. Philol.)	7	9	7	2	5	5	7	12	21	19	15	13	14	18
Latin	1	3	3	4	3	4	4	3	9	5	3	3	3	6
Germanic Languages	3	3	4	4	4	1	2	1	3	3	5	5	7	8
Romance Languages	1	4	2	3	6	5	7	2	2	3	6	9	8	6
English	9	22	12	11	12	11	12	11	24	10	12	17	5	7
Philosophy	18	23	20	20	14	15	13	32	38	35	37	30	35	32
History and Pol. Sci.	19	22	20	16	15	24	23	37	54	45	28	31	47	43
Mathematics and Astronomy	9	13	5	4	4	3	7	20	31	27	16	21	18	20
Physics	16	20	15	9	12	12	15	16	35	31	20	14	18	22
Chemistry	15	22	16	11	14	18	13	24	21	13	11	14	18	15
Botany and Arboriculture	5	2	6	6	7	7	9	13	11	12	14	15	19	15
Entomol. and Gen. Inv. Zool.	6	5	2	1	2	1	3	5	6	8	3	4	3	10
Physiol. and Vertebrate Zoology	7	7	4	1	2	1	–	9	10	7	3	3	1	2
Anatomy	–	–	–	–	–	1	–	–	–	–	–	1	–	–
Microscopy and Embryology	–	–	–	–	–	1	1	–	–	–	–	3	2	2
Geol., Paleont., and Mineralogy	2	2	2	2	4	4	2	2	6	5	8	11	13	11
Agriculture	8	3	1	8	11	13	13	5	1	–	3	10	13	13
Veterinary Medicine	–	–	–	–	–	1	1	–	–	–	–	–	3	2
Architecture	1	1	1	1	1	1	3	2	–	–	–	1	1	3
Civil Engineering	7	20	16	8	4	5	4	8	20	18	10	5	5	6
Mechanical Engineering	33	49	38	20	13	12	15	34	44	31	19	16	11	14

III. Actual number of students in each subject during 1892–99.

Subject	'92–3	'93–4	'94–5	'95–6	'96–7	'97–8	'98–9
The Semitic Languages and Literatures	0	0	0	0	1	1	1
Greek and Comparative Philology (including Classical Archæology)	9	16	13	8	6	10	14
Latin	3	11	8	5	4	6	10
The Germanic Languages	6	7	4	5	8	7	10
The Romance Languages	3	5	4	5	8	8	9
English	13	26	15	16	19	12	14
Philosophy	22	31	24	22	19	22	21
History, Anc. and Med.	7	16	12	8	5	7	11
Modern	6	11	15	11	14	21	22
American	9	15	10	8	9	15	12
Political Science and Social Science	17	26	23	12	9	15	12
Mathematics and Astronomy	24	34	23	14	18	20	18
Physics	30	43	36	21	17	19	24
Chemistry	20	24	17	13	15	19	14
Botany and Arboriculture	17	11	12	13	14	15	16
Entomology and General Invertebrate Zoology	12	11	9	4	6	4	10
Physiology, Vertebrate Zoology, and Neurology	10	9	5	3	1	2	3
Anatomical Methods and Human Anatomy	0	0	0	0	2	1	0
Microscopy, Histology, and Embryology	8	9	6	3	3	3	3
Geology, Paleontology, and Mineralogy	5	6	7	7	8	11	10
Agriculture	5	1	0	4	7	10	10
Horticulture	3	1	1	5	10	12	11
Veterinary Medicine	0	0	0	0	0	2	1
Architecture	1	1	1	1	1	1	3
Civil Engineering	8	24	17	10	5	6	5
Mechanical Engineering	38	54	38	23	16	14	17

During the past twelve years 955 graduates of one hundred and sixty institutions have been admitted to graduate work, distributed as indicated in the following table:

Acadia	5
Adelbert	1
Alabama, Agr. and Mech. Coll.	1
Albion	2
Alfred	2
Allegheny	2
Amherst	5
Anatolia	1
Arkansas	2
Bates	2
Beloit	2
Boston	4
Bowdoin	1
Brooklyn Poly.	1
Brown	10
Bryn Mawr	1
Buchtel	6
Bucknell	2
California	5
Campbell	1
Capitol	1
Carleton	2
Chaddock	1
Cincinnati	2
Colgate	1
Colorado, Univ. of	2
Colorado, School of Mines	1
Columbia	3
Columbia School of Law	1
Columbia School of Mines	1
Cornell College	2
Cornell University	400
Dalhousie	21
Dartmouth	3
Davidson	2
Dennison	1
Denver	1
DePauw	13
Earlham	5
Elmira	2
Erlangen	1
Franklin	3
Franklin and Marshall	1
Furman Univ.	1
Gallaudet	1
Ghent, State Univ. of	1
Halle	2
Hamilton	5
Hamline	1
Hannover, Tech. Hochschule	1
Harvard	10
Harvard Annex	1
Harvard (Lawrence Scientific)	1
Haverford	2
Hillsdale	4
Illinois	7
Illinois Wesleyan	1
Indiana	24
Indianapolis	2
Iowa Agr.	7
Iowa Coll.	4
Iowa State	3
Iowa Wesleyan	1
Japan Imperial Univ.	1
Johns Hopkins	3
Kansas Agr.	3
Kansas State Univ.	10
Knox	6
Lafayette	3
Lake Forest	1
Lawrence	1
Lehigh	6
Lombard	1
London	2
Luther	3
McGill	4
McKendree	1
Maine Agr.	5
Manitoba	7
Mason Coll. (Birmingham, Eng.)	1
Massachusetts Agr.	5
Massachusetts Inst. of Tech.	4
Michigan Agr.	6
Michigan Univ.	16
Milton	1
Minnesota	11
Missouri State	2
Mt. Allison	2
Mt. Holyoke	2
Mt. Union	1
Napa	1
Nashville	1
Nebraska	6
Newberry	1
Newcomb	1
New Hampshire Agr.	1
New York, Coll. of the City of	5
North Carolina	2
Northwestern Univ.	3
Notre Dame	1
Oberlin	6
Ohio State	10
Ohio Univ.	2
Ottawa	1
Otterbein	1
Oxford	1
Pacific Univ.	1
Pennsylvania State	1

Pennsylvania Univ.	1
Pennsylvania Western Univ.	1
Pine Hill Theo. Sem.	1
Presbyterian College of S. C.	1
Princeton	4
Purdue	9
Queen's Univ. (Kingston, Can.)	2
Randolph-Macon	1
Rensselaer Poly.	1
Rochester	5
Rose	3
Rutgers	3
St. Andrews (Scotland)	1
St. Petersburg (Russia)	1
Smith	21
South Carolina	3
South Dakota Agr.	3
Southern California	2
St. Olaf	1
Stanford	8
Stevens Inst.	4
Strassburg (Germany)	1
Swarthmore	2
Sydney Univ. (New So. Wales)	2
Syracuse	12
Texas	4
Texas Agr.	2
Tokio Univ.	1
Toronto	12
Trinity Coll. (Toronto)	1
Tulane	1
Union	1
U. S. Naval Academy	3
Vanderbilt	1
Vassar	15
Vermont	1
Victoria	1
Vienna	1
Virginia	4
Virginia Agr. and Mech. Coll.	2
Virginia Poly. Inst.	1
Wabash	1
Washington University	2
Wellesley	8
Wells	1
Wesleyan	4
Westminster	2
Wheaton	2
Williams	3
Wilson	1
Wisconsin	7
Wittenberg	1
Woman's College, Baltimore	1
Wooster	2
Worcester Poly.	3
Yale	12
Yale Theological Sem.	1
Yale (Sheffield)	3

Graduate students who are not candidates for a degree, as well as those who are, have been required to work under the direction of a special committee of the Faculty. The numbers of such students during the years 1889-99 are as follows:

'89-90	'90-91	'91-92	'92-93	'93-94	'94-95	'95-96	'96-97	'97-98	'98-99
6	2	2	4	1	11	14	18	14	35

The great increase in the number of graduate students, not candidates for a degree, during the past year may be explained as follows: In the total number are included the nine Honorary Fellows, and eight graduate members of the College of Law for whom no advanced degree in law is at present available. The number of graduate students in the summer term of entomology, not candidates for a degree, and belonging in this category, is also steadily increasing from year to year.

Advanced degrees conferred 1888-99:

	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98	'99	Total
A.M.	3	1	8	6	6	4	8	2	1	10	10	16	75
Ph.M.	--	--	1	--	2	--	3	1	3	--	--	--	10
M.L.	--	--	--	--	1	3	2	3	--	--	--	--	9
M.S.	3	6	7	7	7	6	10	7	12	6	6	3	80
M.C.E.	1	--	1	2	--	2	8	4	--	1	3	2	24
M.M.E.	2	1	6	3	6	14	16	8	15	6	2	7	86
Ph.D.	3	1	2	3	8	4	16	13	14	11	23	7	105
D.Sc.	--	--	--	--	--	2	3	6	3	3	--	--	17
Total	12	9	25	21	30	35	66	44	48	37	44	35	406

HONORARY FELLOWS

The action of the University Faculty, recommending that the Board of Trustees establish the position of Honorary Fellows, was not taken until the last meeting of the year 1897–98. This recommendation was shortly afterward adopted by the Board of Trustees, but no general public notice could be given of this action before the opening of the fall term. Nevertheless, a number of applications were made for such appointments, and before the end of the year nine appointments had been made, three in philosophy, two in mathematics, one in chemistry, one in physics, one in Greek and Latin, and one in history and political science. Four of the applicants had received the Doctor's degree at Cornell University, two at Halle University, one at Wisconsin University, one at the University of Leipsic, and one at the University of Vienna. The object of the recommendation is to encourage the use of the facilities of the University for advanced study, and to afford an opportunity to mature students who might desire to continue their own independent investigations. The duration of the experiment is naturally too brief at present to justify further comment.

III. FACULTY LEGISLATION

The legislation of the current year has been somewhat less extensive and important than heretofore. Continuing the legislation of the previous year, with reference to the deposit of a type-written thesis in the University Library, where the required printed copies of the thesis had not yet been furnished, together with the decision that this type-written thesis should be considered the permanent property of the University (see President's Report for 1897–98, Appendix II, pp. VII–VIII), the University Faculty formally expressed the opinion that all written or type-written theses deposited in the University Library should be regarded as manuscripts and should not be allowed to circulate outside of the Library building except for deposit in department or seminary libraries, in which case they should not be withdrawn from said libraries for home use.

One of the colleges of the University having reported to the University Faculty that the Faculty of the said college intended to recommend at the coming Commencement a member of its body for the degree in its care, provided he should fulfill all the requirements for that degree, the University Faculty passed the following resolution as an indication of what it considers to be the policy hereafter to be pursued: "In the opinion of the University Faculty the resolution of the General Faculty of Nov. 17th, 1893: 'That it is not in accordance with the policy of this Faculty to recommend members of its own body for degrees,' should apply to all faculties and to all degrees, whether baccalaureate or advanced." It was further voted that the preceding resolutions should not be construed as affecting such members of the various faculties as are not entitled to vote, or as prejudicing pending registrations for such degrees.

The matter of undergraduate scholarships and fellowships which had previously been under discussion (see President's Report, 1897–98, Appendix II, p. XVII), was further debated during the year, but no satisfactory conclusions were reached, and the whole question, together with a revised plan for the scholarship examinations which had been presented, was referred back to the Committee on Scholarships and Fellowships to examine and report. A modification of the regulations, which was passed, throws open scholarships to all members of the freshman or first year class in courses leading to first degrees in all colleges of the University. This modification removes the previous limitation of competition. Another modification of the regulations restores the earlier requirement that the holders of the scholarships should maintain a high rank in their University work.

In the early part of the year a committee was appointed to consider the improvement of the official publications of the University, and to report certain recommendations, which were adopted. These recommendations aimed, first, at an improvement regarding the paper and type to be used; suggested as much uniformity as possible in the form of publications of all departments; advised that in the announcement of any one college or department mention be made of all the departments of the University; and suggested to the Committee on the Register certain modifications of the cover and title page of that publication.

Recent legislation regarding graduate work and advanced degrees has previously been noted. (See pages IX-X.)

Respectfully submitted,

HORATIO S. WHITE,

Dean of the University Faculty.

APPENDIX III

REPORT OF THE DEAN OF THE FACULTY OF ARTS AND SCIENCES

To the President of the University:

SIR:—I have the honor herewith to submit my third annual report as Dean of the Faculty of Arts and Sciences.

I. ADVANCED STANDING

The cases of students applying for advanced standing in the Faculty of Arts and Sciences for 1898-99 have been settled in accordance with the action of the University Faculty (October 2nd, 1896) by a committee consisting of the Dean and the heads of the departments concerned. Forty-three students have thus been admitted to advanced standing in the Academic Department during the last year as follows: Special 1, freshman Arts 9, sophomore Arts 8, sophomore Philosophy 1, junior Arts 7, junior Science 3, junior Philosophy 1, senior Arts 2, senior Science 7, senior Letters 1, senior Philosophy 3. The policy outlined in my last report (p. XIX) has been followed, and in view of the approximate uniformity of entrance requirements in 1900 it does not seem necessary to depart from this policy.

II. ON DOUBTFUL CASES

The Faculty, acting through the Committee on Doubtful Cases, temporarily removed from the University at the end of the fall term five students for deficiency in scholarship, and warned or referred seventeen others. Four of the five removed were freshmen, the other a senior. In only one case could deficient preparation be urged as an excuse for failure; in the other cases the cause of failure was evidently neglect of work. None of those removed were readmitted. At the end of the winter term no one was removed, warned, or referred, a remarkable and unprecedented record. Two were temporarily removed at the end of the spring term, one of them a freshman, the other a sophomore, and ten were warned or referred.

The record of the action of the committee for the past three years is as follows:

Temporarily removed: 1896–97, 12, 8, 3; 1897–98, 12, 4, 2; 1898–99, 5, 0, 2.

Warned and referred: 1896–97, 17, 21, 10; 1897–98, 12, 3, 2; 1898–99, 17, 0, 10.

It is gratifying to know that the percentage of students not performing their university work in a satisfactory manner is so small that it need not be an important factor in the consideration of the rules and regulations of the Faculty of Arts and Sciences.

III. RECORDS OF CANDIDATES FOR GRADUATION

The Committee on Records of Candidates for Graduation reported favorably on the following number of candidates, who were afterwards recommended by the Faculty of Arts and Sciences and received their degrees at Commencement:

Arts	50
Philosophy	26
Science	59
Letters	5

It is interesting to note that the degree of Bachelor of Letters was conferred this year for the last time, and that the degrees of Bachelors of Philosophy and Science will not be conferred after 1900.

IV. ON EXTRA HOURS AND CHANGES IN REGISTRATION

The jurisdiction of this committee includes cases of substitution for required work and the decision in cases of petitions for permission to graduate in less than three years.

The number of petitions acted upon during the year was 927. It is difficult to give an exact numerical classification of the categories of these petitions. They include petitions to discontinue work already registered for; to change work already registered for; to substitute other studies for required work; to take extra hours, etc.

The policy of the Faculty of Arts and Sciences in regard to granting extra hours, that is, hours in excess of the maximum, viz.: eighteen hours per week, is fully explained in my last annual report (pp. XX–XXI) and need not be repeated here. In pursuance of this policy the committee has granted no petition for extra hours during the last year, and but few were presented. The primary object of obtaining extra hours was to enable the student to graduate in less than four years of residence. This, as was shown in my last report, can be done without extra hours if the student enters not less than eighteen hours in advance of his course. If this is not the case the student must remain longer than three years, or perform some work in the Summer Session.

The number of petitions for changes in work for which the student has registered, including the dropping of work already begun and substituting different work for it, the assumption of new work, etc., has been very large.

The position of the committee in this matter is a delicate one. If the student obtains the approval of the professors concerned, and the rule for extra hours is not violated, the petition is granted. The remedy for the evil, if it be one, is in the hands of the individual professors, who have the right, with the approval of the Faculty, to cancel credits already received. I find no record this year of any Faculty action in regard to such cancellation of credit, although it is probable that individual professors have exercised the right. It is greatly to be desired that such action, as affecting the official record of the student, should be taken only in conjunction with the Faculty and appear on its minutes.

V. ON LEAVES OF ABSENCE, INCLUDING LATE REGISTRATION

The Dean is authorized to grant leaves of absence from town for satisfactory reasons, except in cases of absence extending over term examinations. Excuses for absence on account of illness are now recommended by the professor of physical culture for the men, and by Miss Canfield for the women, and this item is accordingly omitted from the analysis of the current year. It may, however, be stated here that by Faculty action (February 3rd, 1899) the endorsement of Dr. Hitchcock or Miss Canfield is required for all physicians' certificates. It is greatly to be desired that this rule be strictly enforced in order that there may be kept a full record of illness, where the student has not been confined to the Infirmary. Reports from the Infirmary, it may be said here, are received daily at the office of the President and forwarded to the Deans of the Colleges concerned, who are expected to communicate the facts to the various professors in whose classes the student reported ill is registered. The following table, then, includes only leaves of absence given for actual absence from town, and not absences caused by illness where the student remains in town.

	Fall	Winter	Spring
Personal illness	11	8	5
Illness in family	6	8	7
Weddings	7	5	1
Business summons	9	9	11
Delegates to convention	8	16	11
Voters	29	2	0
Excursions, geological, etc.	0	0	8
Miscellaneous	6	5	6

Absences incurred by the members of the various athletic organizations do not appear in the above list. Under the present system the Registrar, on the authority of the Athletic Council, issues a leave of absence to be endorsed by the Dean of the College concerned. Owing to the diversity of manner in which absences are regarded by the various Colleges and individual professors, these leaves of absence are not obtained or presented in all cases, and I do not feel that I have sufficient data to report.

The Dean is also authorized to grant permission to register to students who arrive after Registration Day. Of such cases, in which excuses more or less valid were presented, and in the majority of which the delay occasioned was not more than two or three days, there were during the past year the following number:

Fall	19
Winter	70
Spring	51

The principal excuses offered were illness, detention by necessary business, and failure to make connection with trains. For the last two years the numbers for the corresponding terms were: 1896–97, 20, 118, 33; 1897–98, 18, 60, 43.

VI. THE NEW ENTRANCE REQUIREMENTS AND ELECTIVE SYSTEM

The new entrance requirements and the elective system adopted in 1896 have now been in effect for two years and the questions which naturally arose in connection with their introduction have been settled either by Faculty action or by the action of the Committee on Doubtful Cases, which has continued to act also as a committee on admission. This committee has gradually enforced the specific requirements of the various groups, allowing an actual deficiency of not more than two terms in one of the modern languages, and requiring, as stated in my last report, all deficiencies to be made up within one year. The beneficial result of this method is seen in the record of scholarship for the past year. Of the five students removed temporarily from the University for deficient scholarship, only one, perhaps, failed on account of insufficient preparation. It will be seen from the figures which follow that Group C (advanced French, advanced German, and advanced mathematics) continues to be the most difficult of the three groups of advanced requirements. This difficulty will probably be lessened to some extent by the alternate requirements in science adopted in May, 1897, and which will go into effect for the first time in September, 1899.

One hundred and sixty-six freshmen entered the new course in Arts in September, being the second class to enter under the new requirements. Of these, 79 offered the entrance requirements in Greek and Latin (Group A), 51 those in Latin and advanced German (Group B), 27 those in Latin and advanced French (Group B), and 9 those in advanced German, advanced French, and mathematics (Group C).

It appears from the above that out of 166 freshmen in Arts, 157 offered Latin for entrance, while only 9 (the same number as last year) offered the third group of advanced French, advanced German, and mathematics. Of those who offered Latin, 78 united it with a modern language and 79 united with it Greek. Of those who offered Latin with a modern language, 51 chose German and 27 French.

The following table will show the comparison between the two years in question:

	1897–98	1898–99
Total freshmen in Arts	137	166
Group A	47	79
Group B—Latin and German	54	51
Latin and French	27	27
Group C	9	9

ELECTIVE WORK TAKEN BY THE CLASS OF 1902 IN ARTS AND SCIENCES DURING THE FRESHMAN YEAR

The studies elected by the above 166 freshmen in the Course in Arts during the year 1898–99 are as follows:

CLASSICAL ARCHÆOLOGY

4. History of Greek Sculpture	3

SEMITIC LANGUAGES

1.	Hebrew	2
2.	Arabic	1
6.	Geography and Antiquities of the Semites	2
7.	Semitic Literature	2
8.	Oriental History	15

GREEK

A.	Elementary Greek	6
1.	Freshman Course	50
1a.	Supplementary Course	8
9.	Greek Life	1

LATIN

1.	Freshman Course	105
5.	Republican Literature	1
13.	Sight Translation	40

GERMANIC LANGUAGES

1.	Freshman Course	44
2.	Sophomore Course	28
3a.	German Composition	5
3b.	German Composition	12
3c.	German Composition	2
4.	Historical Drama	11
5.	Goethe's Faust	14
6.	Goethe's Reise	7
7.	Lessing's Life	6
10.	German Letters	2

ROMANCE LANGUAGES

1.	Freshman Course	64
2.	Sophomore Course	10
3.	Literature of the XVII Century	13
4.	Romantic School	7
6.	French Language and Literature to the XVI Century	2
9.	French Drama XIX Century	8
10.	French Conversation and Composition	2
11.	The French Theatre in the XVII Century	4
12.	French Comedy of XVIII Century	1
16.	Italian Grammar and Reading	4

ENGLISH

1.	Freshman English	113
1a.	Narration	1

1b.	Exposition	1
2.	English Composition	1
5a.	English Prose XIX Century	2
9.	Teachers' Class	1
10.	The History of the English Language	19
11.	English Philology	5
31.	XIX Century Poetry	22
33.	American Literature	12
34.	Chaucer's Tales	1
35.	General Lectures on English Literature	23

PHILOSOPHY

1.	Introduction to Philosophy	3
8.	History of Religions	1
9.	Philosophy of Education	1

HISTORY AND POLITICAL SCIENCE

1.	Ancient Greece	1
4b.	The Renaissance	45
13.	General History of England	2
21.	History of New York	14
22.	American History (Discovery to Independence)	23
41.	Social Science	1
51.	Political Economy	13
54.	Money, Credit, and Banking	2
57.	Economic History	3

MUSIC

1.	Elementary Courses	16

MATHEMATICS

(Nos. 6, 7, 8 are solid geometry, advanced algebra, trigonometry, for fall, winter, spring, respectively, therefore, the numbers given below are in some cases for only a portion of the year).

2.	Analytics, etc.	2
6.	Solid Geometry, etc.	48
7.	Solid Geometry, etc.	12
8.	Solid Geometry, etc.	21
9.	Supplementary Course	12

PHYSICS

2a.	Short Course in Experimental Physics	6
2b.	Longer Course in Experimental Physics	1
9.	Photography	1

CHEMISTRY

1.	General Inorganic Chemistry	31
2, 3.	Qualitative Analysis and Quantitative Analysis	1

BOTANY

1, 2.	General Com. Morphology and Phys. of Plants, etc.	7
10.	Comparative Morphology	2

PHYSIOLOGY, VERTEBRATE ZOOLOGY, AND NEUROLOGY

(In a few cases the student has planned to take course 1, 2 and 3 but a portion of the year).

1, 2, 3.	Physiology, Vertebrate Zoology, and Neurology	25
4.	Practical Physiology	3
5.	Comparative Anatomy	1
7.	Advanced Neurology	1

INVERTEBRATE ZOOLOGY AND ENTOMOLOGY

1, 3.	Invertebrate Zoology and General Entomology	3
4.	Entomology	1

PALEONTOLOGY AND GEOLOGY

6.	History of the Development of Paleontology	1
21.	General Geology	7
22.	Physiographic Geology	1

HYGIENE

1.	Hygiene and Physical Culture	10
2.	Hygiene and Physical Culture	8

MICROSCOPY AND HISTOLOGY

1, 2, 3.	Microscopy and Histology	3

MILITARY SCIENCE

5.	Military Science	6

BIBLIOGRAPHY

1.	Bibliography	2

ARCHITECTURE

22.	Drawing	1
31.	History of Art	4

FREEHAND DRAWING

1.	Freehand Drawing	6

It should be stated that the above figures represent the studies registered for at the beginning of the year, and that there have been changes since upon petitions endorsed by the professors concerned. It is not believed that these changes are important enough in number or character to change materially the above statement.

Of even greater interest is the question of the studies taken during their second year by the class which entered in 1897. It is proposed to follow carefully the studies chosen by the members of the class of 1901 during the four years of their course, in order to see if possible whether under the new elective system they have been guided by any systematic scheme or study. The individual record is preserved in the Registrar's office, and only the general results can be given here. It should be remembered that under the elective system a student may postpone work from one year to another, hence in the comparative table, which follows, a study mainly for freshmen may be taken by sophomores. The important point is that all the students whose courses are specified in the following table entered the Course in Arts in 1897–98.

ELECTIVE WORK TAKEN BY THE CLASS OF 1901 IN ARTS AND SCIENCES DURING FRESHMAN AND SOPHOMORE YEARS

Of the 137 who entered the Course in Arts as freshmen in 1897 (37 of whom did not return as Arts, 1898–99), 47 have offered the entrance requirements in Greek and Latin, 54 those in Latin and advanced German, 27 those in Latin and advanced French, and 9 those in advanced German, advanced French, and mathematics.

Courses of study have been taken as follows .

		1897–98	1898–99
		STUDENTS	
	GREEK.		
A.	Elementary Greek	2	2
1.	Freshman Course	31	3
1a.	Supplementary Course	2	–
2.	Sophomore Greek	–	13
9.	Greek Life	–	9
13.	New Testament Greek	1	–
	SEMITIC LANGUAGES		
8.	Oriental History	1	1
	LATIN		
1.	Freshman Course	83	1
2.	Sophomore Latin	–	18
3.	Cicero's Letters	–	6
5.	Republican Literature	–	1
7.	Latin Writing	–	1
9.	Roman Antiquities	1	–
13.	Sight Translation	14	6

		1897–98	1898–99
		STUDENTS	
	GERMANIC LANGUAGES		
1.	Freshman Course	39	10
2.	Sophomore Course	23	24
3.	German Composition	16	13
4.	Heine's Life and Works	14	–
4.	Historical Drama	–	10
5.	Goethe's Life and Writings	7	–
5.	Goethe's Faust	–	12
6.	Goethe's Reise	–	6
7.	Lessing's Life	–	3
8.	German Historical Dramas	11	–
9.	The Modern Novel	2	–
10.	German Letters	–	1
	ROMANCE LANGUAGES		
1.	Freshman Course	59	6
2.	Sophomore Course	15	33
3.	Literature of the XVII Century	13	8
4.	Romantic School	–	3
6.	French Language and Literature to XVI Cent.	1	1
7.	Modern French Drama	3	4
9.	French Drama XIX Century	–	2
10.	French Conversation	8	2
12.	French Comedy of XVIII Century	1	–
16.	Italian Grammar and Reading	2	3
17.	Spanish Grammar and Reading	1	–
	ENGLISH		
1.	Freshman English	93	7
1a.	Narration	–	5
2.	Short Paper Course	6	–
2.	English Composition	–	32
3.	Literary Forms	7	–
5.	English Prose, XVIII Century	2	–
5a.	English Prose, XIX Century	–	9
6.	Argumentative Writing	1	8
9.	Teachers' Class	–	1
10.	The History of the English Language	9	3
11.	Old English (Anglo-Saxon)	3	–
11.	English Philology	–	2
20.	Public Speaking	–	17
21.	Oratory	–	1
30.	English Literature	6	–
31.	XIX Century Poetry	–	21

		1897-98	1898-99
		STUDENTS	
32.	Shakespearian Readings	11	-
33.	American Literature	36	10
34.	Chaucer's Tales	-	1
35.	General Lectures on English Literature	-	1
36.	English Poets of Romantic School	-	1

PHILOSOPHY

1.	Introduction to Philosophy	-	44
2.	Experimental Psychology	-	2
6.	Systematic Ethics	-	2
7.	Applied Ethics	-	1
8.	History of Religions	-	2
9.	Philosophy of Education	-	2
27.	History of Education	-	1
28.	Psychology Seminary	-	1

HISTORY AND POLITICAL SCIENCE

1a.	Ancient Greece	1	1
1b.	Ancient Rome	2	-
4a.	Europe during the Middle Ages	34	-
4b.	The Renaissance	-	12
8.	Oriental History	-	1
9a.	Oriental History	2	-
13.	General History of England	4	52
14.	General History of Europe	1	3
20.	History of India	1	-
21.	History of New York	25	1
22.	American History (Discovery to Independence)	5	18
23.	American History (Independence to 1840)	-	7
27.	American History Seminary	-	2
31.	Political Institutions	-	5
34.	Introduction to Political Science	5	-
41.	Social Science	-	10
51.	Political Economy	9	20
54.	Money, Credit, and Banking	1	9
55.	The Wages System	-	1
56.	Economic Legislation	-	1
59.	Finance	-	1

MUSIC

1.	Elementary Courses	8	-
1.	Vocal Music	-	2
2.	Chorus-singing	2	-

		1897–98	1898–99
		STUDENTS	

MATHEMATICS

		1897–98	1898–99
1.	Advanced Algebra, etc.	3	–
2a.	Analytic Geometry	1	–
3.	Analytic Geometry, etc.	1	–
6.	Solid Geometry, etc.	36	1
7.	Solid Geometry, etc.	14	3
8.	Solid Geometry, etc.	9	1
9.	Supplementary Course	7	–
10.	Analytic Geometry and Calculus	6	5
12.	Higher Algebra and Trigonometry	–	4
13.	Projective Geometry	–	2
15a.	Lines of first and second order	–	2
40a.	Descriptive Astronomy	–	1

PHYSICS

		1897–98	1898–99
2a.	Short Course in Experimental Physics	5	10
2b.	Longer Course in Experimental Physics	5	4
3.	Experimental Physics	–	2
9.	Photography	1	–

CHEMISTRY

		1897–98	1898–99
1.	General Inorganic Chemistry	39	5
2, 3.	Qualitative Analysis and Quantitative Anal.	4	4
5, 6.	Qualitative and Quantitative Analysis	–	5
7.	Quantitative Analysis	–	1
20.	Organic Chemistry	–	2
21.	Organic Chemistry Laboratory	–	1
25.	History of Chemistry	–	1
27.	Inorganic Chemistry	–	1
46.	Industrial Chemistry	–	1
47.	Industrial Chemistry Seminary	–	1

BOTANY

		1897–98	1898–99
1.	General Com. Morphology and Phys. of Plants	9	4
2.	Special Morphology of Higher Plants	7	4
5.	Geographical Botany	1	–
8.	Comparative Histology	–	1
10.	Comparative Morphology	–	2
11.	Mycology	–	1
11a.	Algology	1	–
11b.	Taxonomy of the Bryophytes and Pteridophytes	1	–
13.	Research Methods	–	1

		1897–98	1898–99
		STUDENTS	
	ENTOMOLOGY AND GENERAL INVERTEBRATE ZOOLOGY		
1.	Invertebrate Zoology, general course	9	2
2.	Invertebrate Zoology, special course	3	–
3.	General Entomology	6	2
	PHYSIOLOGY, VERTEBRATE ZOOLOGY, AND NEUROLOGY		
1, 2, 3.	Physiology, Vertebrate Zool., Neurology	16	2
	ANATOMICAL METHODS AND HUMAN ANATOMY		
1, 2, 3.	Anatomical Methods and Gross Anat., etc.	3	1
	MICROSCOPY, HISTOLOGY, AND EMBRYOLOGY		
1, 2, 3.	The Micro. and Microscopical Meth., etc.	3	1
	GEOLOGY		
4.	Paleontological Illustration	3	–
11.	Mineralogy	–	1
21.	General Geology	–	3
	HYGIENE		
1.	Hygiene and Physical Culture	8	1
2.	Hygiene and Physical Culture	7	2
	BACTERIOLOGY		
22, 23.	Bacteriology	–	1
	FREEHAND DRAWING		
1.	Freehand Drawing	9	1

It should be stated that the above figures represent the studies registered for at the beginning of the year and that there have been changes since upon petitions endorsed by the professors concerned. It is not believed that these changes are important enough in number or character to change materially the above statement.

Of the 157 who offered Latin for entrance 45 dropped it, and 12 dropped both Greek and Latin. The small number who offered the third Group would seem to show, what was pointed out in my last report, that this is the most difficult of the three Groups, and that the science alternate for mathematics recently introduced in this Group will give needed flexibility.

The following table will give a comparative view of the studies taken by the freshman classes of the last two years:

SUBJECTS	Class of 1901	Class of 1902
Semitics, Greek, and Latin	16.1%	22.5%
Modern European and English Languages	46.5	43.2
History and Political Science	10.7	10.
Philosophy	------	.5
Mathematics	9.2	9.2
Chemistry and Physics	6.4	3.9
Botany, Physiology, Zoology, Geology, etc.	7.1	5.4
Music, Drawing, History of Art, etc.	2.3	2.9
Hygiene and Physical Culture	1.8	1.7
Bibliography	------	.2
Military Science	------	.6

It is not necessary to pursue any further at this time the analysis of the above tables. It is intended to follow the class entering in 1897 through their subsequent course and ascertain if possible whether under the new system they are pursuing "definite or systematic lines of study."

VII. FACULTY LEGISLATION

The year has been marked by two important acts of Faculty legislation concerning the marking system and undergraduate theses. As these acts were the continuation and settlement of earlier discussions they may be considered first in order.

In my last report I gave a history of the marking system which closed with the introduction on April 8th, 1898, of the following motion: *Resolved*, 1st, That the general system of reporting standings of students on the scale of 100 be abandoned, and that the standings of students be indicated by the terms "passed," "conditioned," and "failed"; 2nd, that in the form for reports a column be reserved for remarks by the professors. This resolution was made the special order for the June meeting, but was not called up.

On the 4th of November, 1898, the mover of the above resolution received leave to modify it so as to read as follows: *Resolved*, 1st, That hereafter the standing of students in the Academic Department be indicated in the reports and records by the terms "passed," "conditioned," and "failed," or by some equivalent sign; and, 2nd, That in the form for reports a column be reserved for remarks. The above resolution having been decided to be out of order in the Faculty of Arts and Sciences as involving students in other Colleges, a modified resolution was introduced on the 3rd of March, 1899, as follows: *Resolved*, 1st, That beginning with the academic year 1899–1900 the words "passed," "conditioned," or "failed," shall be a sufficient report of the class standing of any student registered in the Academic Department; 2nd, That in the report blanks a column shall be reserved for additional remarks by the instructor. The first part of the resolution was amended to read as follows: 1st, That beginning with the academic year 1899–1900 either a numerical mark or the words "passed," "conditioned," or "failed," shall be a sufficient report of any student registered in the Academic Department. This resolution as amended was lost by a vote of 17 to 12, and the second part, depending upon it, was then unanimously lost.

In the first year after the separation of the Faculties a resolution was introduced (October 2nd, 1896) in the Faculty of Arts and Sciences making theses elective. The words of the resolution were : *Resolved*, That hereafter no thesis be required of candidates for the baccalaureate degree, but that any candidate for that degree be permitted to write a thesis under the direction of any department in which he shall have successfully taken at the time of the approval of his thesis subject not less than twelve hours. For such thesis, if accepted, credit may be allowed in the discretion of the head of the department concerned to an amount not to exceed three hours in any one term, or nine hours in all. The resolution was laid upon the table, and at the following meeting of the Faculty (October 16th, 1896) various amendments were offered in regard to the number of hours of credit to be given for the thesis, and after discussion the resolution was again laid upon the table.

The above resolution was, after due notice, taken from the table at the meeting of May 5th, 1899, and amended so as to read as follows: *Resolved*, That hereafter the preparation of a thesis be optional for candidates for the baccalaureate degree, but that any candidate for that degree may be permitted to write a thesis under the direction of any department. For such thesis, if accepted, credit may be allowed, in the discretion of the professor concerned, to an amount not exceeding three hours in any one term or nine hours in all. The resolution as amended was made the subject of discussion at a special meeting of the Faculty on the 13th of May, 1899, and was adopted by a vote of 23 to 4.

The policy of the Faculty in regard to the admission of special students was defined by action taken on the 4th of November, 1898, as follows : Special students in the academic department must be at least twenty-three years of age. This privilege of admission without examination is not designed for students coming directly from secondary schools, but rather for those who have been engaged in teaching or in some other pursuit of a nature to fit them for advanced work in some field of study. This motion was communicated to the University Faculty on the day of its passage.

The matter of attendance and scholarship during the term has always been in the hands of the department concerned, and it has been customary in the past for the instructor to warn students neglecting their work. In case no improvement has been shown, the President, on the recommendation of the head of the department, has excluded such negligent students from the class without waiting for the result of the term examination. This method has been found to be cumbersome and involving delay, and at the meeting of the Faculty held on December 2nd, 1898, No. 4 of Rules for the Guidance of Students was amended so as to read : 4. Regular attendance at lectures and recitations is expected. A subject once elected must be carried through to completion, otherwise credits already received may be cancelled. A student neglecting his work is warned by the instructor. If this does not result in satisfactory amendment he may be excluded from the class by the head of the department.

A fruitful source of annoyance and trouble has always been found in the demand for special examinations, that is to say, examinations held at some other time than the regular term examinations. These are usually granted without hesitation in cases of illness or for other extraordinary reasons. Under the present system of examinations held partly in the last week of the term during the regular hours of recitation, and partly during a period set apart for the purpose, it often happens that an interval of several days intervenes between examinations, and some students are detained in town until a later date than others. This has led to great importunity on the part of students to be examined in advance of the regular examinations. It is difficult to resist this importunity, and in some cases the date of examinations has been changed after the publication of the schedule of examinations. While no formal action has been taken, the opinion of the Faculty has been clearly expressed that after a professor has arranged the date of an examination in the period set apart for that purpose, and the schedule has been printed, no change can be made without the consent of the Faculty. In order to obtain the opinion of the Faculty on the whole matter, a number of petitions asking for examinations in advance of the regular examinations were submitted to the Faculty on the 2nd of June, 1899. These were all denied and the discussion showed that in the opinion of the Faculty anticipatory examinations should be given under no circumstances.

The question of credit for work done during the Summer Session was settled at the meeting of March 3rd, 1899, as follows: Regularly matriculated students of the University may receive credit to the extent of ten university hours for work done during the Summer Session, but that work done during the Summer Session shall not be credited for the present towards the minimum of one year's residence for any degree to be recommended by this Faculty. This action was duly reported to the University Faculty.

It has been customary where students are absent during a part of the term from illness or other sufficient reason to give credit for the work of the whole term when the regular or special examinations are successfully passed. Several petitions asking for this privilege were presented to the Faculty and granted or refused, according to the length of the absence. The opinion was expressed that credit should not be given for a whole term when the student had been absent for a considerable part of the time.

The regulation, on p. 69 of the Register, with reference to the election of studies in other Colleges by the students in Arts and Sciences was extended (October 7th, 1898) to the College of Medicine, and students registered in the Academic Department were also permitted to register in the College of Medicine. The object of the latter provision was to enable the student to receive credit in accordance with the laws of the State of New York for the medical work done while registered in the Academic Department. The above action was also duly reported to the University Faculty.

Respectfully submitted,

T. F. CRANE,

Dean of the Faculty of Arts and Sciences.

APPENDIX IV

REPORT OF THE DIRECTOR OF THE COLLEGE OF LAW

To the President of the University:

SIR, I respectfully report:—That the total number of students registered in the College of Law for the present year is two hundred and twenty-four, of whom fifty are from the Academic Department, leaving one hundred and seventy-four as the number pursuing the study of law alone. Our largest enrollment was three hundred and eight, which was for the college year of 1897–98. The number then was probably abnormally increased because of the impending change from a course of two years to one of three. Compared with that year our decrease is eighty-four, but it must be remembered that as a result of lengthening the course of study we have this year but two full classes, and had no reason to expect the presence of a third, or senior class, at all; and it will not be until next year, when we have three regular classes, that we shall be able to see the true and real effect of the change in our conditions of admission and in the length of the college course. The two causes operating together, and somewhat strengthened by the constant increase in the number of law schools, will tend, I think, to keep our attendance somewhat below three hundred. Of those registered for this year there were from New York one hundred and forty-two, from Pennsylvania nine, from Illinois six, from Ohio and Utah three each, from Missouri and New Jersey two each, and from Massachusetts, Connecticut, Florida, Texas, Georgia, Michigan, and Nebraska one each.

The Summer School of last year showed the same small attendance as that of the year previous and will be discontinued hereafter. I always doubted the wisdom of it as it respected students and teachers alike, and

I am glad to see the effort come to an end. It will not be renewed unless and until some much more serious demand for it is manifested.

The work of the year has gone on steadily and regularly and without disturbing incident. During the fall term, the illness of Professor Pound kept him from his classes and his place was supplied by Charles H. Blood in a very satisfactory manner. The professor, with fully restored health, has been able for the rest of the year to carry on his work. Professor Redfield has met our expectations in devoting his whole time to the law of procedure. His instruction is eminently practical, as it should be. He requires his classes to draw every important paper necessary in actual practice, and examines them and points out their defects. That part of his work grew to be very serious in its demands upon his time and strength, and induced us to ask that he be allowed an assistant to bear some large part of the burden and leave the professor less hampered in his instruction. We hope before the fall term begins to secure a suitable person for that duty.

The report of the law librarian is herewith presented. Its recommendations meet our approval. The estimated expenditure for the coming year is slightly increased, but has been kept as low as seemed possible in view of that completeness and perfection already so nearly reached and very much to be desired.

I have heretofore called attention to the need of a more perfect ventilation. All of us have suffered more or less from the lack of it in our lecture rooms, and we are expecting that during the summer an effective system will be provided.

I have only words of commendation for the way in which the professors in their several departments have performed their duties. They have been faithful, thorough, and efficient.

The graduating class for the Commencement of 1899 numbered twenty-four. The change from a two years' to a three years' course would naturally have left us at this Commencement without any graduating class, but enough were able to take the advanced standing to give us the small class which has done the work of the year.

Respectfully submitted,

F. M. FINCH,

Director of the College of Law.

APPENDIX V

REPORT OF THE DIRECTOR OF THE COLLEGE OF AGRICULTURE

To the President of the University:

SIR:—The past year, like the one which preceded it, shows a continued increase in the efficiency and scope of the work undertaken by the various divisions of the College of Agriculture. There is a steady and healthy increase in the number of students who either come to the University for instruction or desire to be taught at their homes. The College has outgrown the facilities furnished for carrying on the work contemplated by the Federal Government under the Morrill Act of 1862, the Hatch Act of 1887, the Act of 1890 supplementing the Act of 1862, Chapter 67 of the Laws of 1898, and Chapter 430 of the Laws of 1899 of New York State.

INSTRUCTION AT THE UNIVERSITY

Twenty students pursuing graduate work are taking both their major and minor subjects, or their major subject, in the College of Agriculture. This is particularly gratifying since students from the other Colleges of the University often elect their work in the College of Agriculture, although the degree for which they are studying may not be the one given by the College.

There have been forty-six students in the regular course, thirty-nine in the special course, total eighty-five, an increase of one as compared with last year. In the winter courses, thirty-nine students in general agriculture and fifty students in dairy husbandry, total eighty-nine, were registered. The total number of students registered in the College during the year, including graduates, was one hundred and ninety-four, an increase of two over last year. There have been in attendance in the winter courses since they were established in 1893 four hundred and eighty-two students.

The number of students who now apply for entrance to the winter courses is as great as can be accommodated with the present limited capacity of class rooms and appliances. It is probable that by a little advertising the number of winter students could easily be increased one hundred per cent, but until the facilities are augmented and larger rooms provided I deem it bad policy to admit more than one hundred winter course students in any one year.

While the number of special students and of students pursuing graduate work in the College has increased, the number of students entering the four years' course has slightly diminished. This decrease is due, without doubt, to the increased entrance requirements which took effect at the beginning of the present collegiate year. It now requires nearly one more year of study and preparation than formerly to enter the College. Recently the entrance requirements for the Course in Agriculture have been somewhat modified. They should be still further modified in order to fit the instruction given in the secondary schools. The course in freehand drawing has been reduced from three to two hours. Origin of soils, sylviculture, zootechny, and diseases of farm animals have been changed from required to elective studies, while farm buildings, study of and designing, three hours, has been made a required study.

BUREAU OF UNIVERSITY EXTENSION

The bill (Chapter 430 of the Laws of 1899) giving to the College of Agriculture of Cornell University thirty-five thousand dollars for the promotion of agriculture throughout the State became a law April 25th, 1899. By reason of this appropriation the College is enabled to continue the work of instruction and investigation throughout the State for another year. Some slight modifications in methods of carrying on the work contemplated by the bill will be made, as the experience of last year shows that some changes can be made to advantage.

The university extension work throughout the State is organized under two bureaus, one of which comprises the nature study work and the farmers' reading course, and the other the investigations. The work of both of these bureaus is supplemented by lectures given at farmers' and teachers' meetings and before the Junior Naturalist Clubs. Personal help is also given to farmers who will undertake to cultivate small areas of land which may serve as object lessons, as well as for investigation.

My last year's report showed that four thousand eight hundred farmers were enrolled in the farmers' reading course; there are now upwards of ten thousand enrolled and at work. The instruction is conducted largely on the Chautauqua correspondence plan, supplemented wherever possible by personal instruction by some member of the staff. During the year five lessons were published and distributed, treating of the following subjects: The Soil, What Is It?; Tillage and Underdrainage, Reason Why; The Fertility of the Soil, What Is It?; How the Plant Gets Its Food from the Soil; and How the Plant Gets Food from the Air. Question papers were sent with each of these lessons; six hundred thousand pages in all have been printed and sent to the pupils in the reading course.

There have been seven thousand names added to the mailing list, by request, for teacher's leaflets since my last report. The total number receiving the leaflets is now upwards of twenty-five thousand. During the year about one hundred Junior Naturalist Clubs have been formed, with a total membership of two thousand.

Most cordial support has been given to all of the work carried on under the State appropriation by many persons whose helpful and kind acts and words of appreciation have been particularly valuable. It would be impossible to mention all of their names, but I cannot forbear from making a few quotations from written or printed communications received.

The Secretary of Agriculture, Honorable James Wilson, says: "There is growing interest in education that relates to production. All classes of intelligent people favor it. Congress endowed colleges to teach it, and progress is being made, but not so rapidly as the growth of the country demands. . . . . The education of our people in common school, high school, and college has not been designed to prepare them for producing, except the very few who have found their way into our agricultural colleges. . . . . In New York the College of Agriculture of Cornell University has a State appropriation of twenty-five thousand dollars per annum [now made thirty-five thousand] to be used in aiding the introduction of nature teaching into the common schools and the carrying on of simple agricultural experiments in different parts of the State. . . . . As a result of the widespread interest on this subject, teachers' manuals and text-books for instruction in this branch are being prepared. Without doubt the greatest difficulties in this matter are to overcome the conservatism of local boards managing the country and to get competent teachers."

Dr. A. C. True, Director of the Office of Experiment Stations, Washington, District of Columbia, says: "There is every reason to believe that the plan of nature teaching as proposed by Cornell University may prove a grand success and be of great benefit to farmers' children. . . . . The ordinary child, whether on the farm or in the town, actually sees comparatively little in the world about him. The wonders of the trees and plants in park or meadow, of birds and insects flying about the house, float like shadowy visions before his eyes. 'Seeing, he sees not.' He needs a teacher who can open his eyes and fix his mind on realities among which his daily life is passed. This accurate observation of natural objects and facts is the only foundation on which scientific attainments can rest. The scientist is chiefly a man who sees better than his fellow men. But it is also a great help in practical life. . . . . Is it not likely that a child who is thus taught will soon begin to see a new value and dignity in farm life and to be less envious of the boy or girl who is shut up within the narrow confines of city streets most of the year? . . . . Large numbers of farm boys and girls go to the schools commonly located near their homes who are unable to attend the longer and more extensive college courses. Surely some provision for agricultural instruction ought to be made in such schools."

Commissioner W. T. Harris of the Bureau of Education, Washington, District of Columbia, writes: "I am glad to receive and examine a copy of your bulletin on the subject of education. We have heard often from the highest authorities of the importance of your series of bulletins, and wish that we might at the Bureau receive the numbers when issued."

The State Commissioner of Agriculture, Honorable Charles A. Wieting, Albany, New York, has given much valuable help by wise counsel and words of appreciation, and by his hearty co-operation in the work undertaken.

The Honorable Charles R. Skinner, State Superintendent of Public Instruction, in his annual report of 1898, says: "The College of Agriculture of Cornell University has inaugurated a vigorous movement looking towards the introduction of nature study into the rural schools and the improvement of school premises and home grounds. Leaflets designed to instruct teachers in the methods and matter of nature study have been issued; bulletins explaining how rural premises may be improved are distributed; an expert nature study teacher has taken periods in many of the teachers' institutes; instruction has been given in the summer schools; experts have presented the subject before various teachers' organizations; pupils of public schools have been organized into Junior Naturalist Clubs, and the work has been pushed and energized by means of a large and personal correspondence. . . . . It is the purpose of those who have this movement in charge to actually reach every teacher in the State of New York with living and practical suggestions on nature study. The organization of children into nature clubs also promises the greatest results. It is proposed to interest every rural school in securing collections of insects, in adorning the walls of the school building with artistic pictures of domestic farm life, in beautifying the premises of the school and the home, and in improving the country highway. All this work, and much more which is in contemplation, must result in an improved public sentiment respecting country life."

"I am particularly interested in this movement, which seems the best yet devised to secure the results from instruction in principles of agriculture suggested in my annual report for 1896. It conforms to the educational principles which, in city schools, have led to courses of instruction in sewing, cooking, and other matters closely related to the daily life of the pupils, all calculated to better the conditions of home life and to stimulate thrift and contentment in place of waste and consequent discontent with conditions and environment."

SCHOOL OF NATURE STUDY

Such a large number of teachers expressed a desire to receive instruction in nature study work during the summer that it has been deemed wise to organize a regular course of six weeks, beginning July 5th, 1899. This demand among teachers for more specific and personal instruction in nature studies has led to preparing and sending out an announcement, which provides for giving instruction in three departments: In Insect Life; In Plant Life; On the Farm.

The instruction "On the Farm" will consist of one lecture per week, followed by excursions and laboratory work. Studies will be made of the nature of soils, the effects of tillage, means of growing plants and animals, farm management, rural beauty, and farm homes. This work will be conducted by Professor Roberts and assistants.

Instruction "In Insect Life," one course, by Professor Comstock and assistants, will comprise work on the habits of insects. The instruction will consist of two lectures and one excursion each week. Laboratory work in methods of nature study with insects, made available for secondary schools.

Instruction "In Plant Life" will consist of lectures, laboratory work, and excursions. Special attention will be given to the habits and characteristics of growing plants, both wild and cultivated. Garden-making will also receive attention. This work will be conducted by Professor Bailey and assistants.

One hundred and eleven students have been accepted; many others have applied, but it was deemed unwise to receive all applicants since the facilities for giving instruction were not sufficient to justify us in taking more than this number.

INVESTIGATIONS AND EXPERIMENTS

The sugar beet investigations were continued on four hundred and thirty-eight farms, and one thousand one hundred and thirty-four pounds of seed, furnished by the National Department of Agriculture, were distributed free. On one hundred and twenty-five farms plats of one half acre or more were grown. A representative of the Station visited most of the farms one or more times during the summer. Somewhat extended investigations with sugar beets were also conducted on the University farm. Four hundred and ninety-six analyses of sugar beets were made. The results of the year's work show, as compared with last year, a slight decrease in yield and in the per cent of sugar content. This decrease was due, without doubt, to the exceptionally unfavorable season. It is hoped that funds will be available for continuing these investigations for two years longer, at the end of which time it is believed that the economy of sugar beet culture and the extent of territory in the State suited to this industry will have been definitely settled. The results of the investigations with sugar beets are embodied in a second bulletin, No. 166, of fifty-four pages.

In addition to the hundreds of plat experiments which were conducted on the home farm, one hundred and one plats were used by the chemical department on many outlying farms for conducting investigations with commercial fertilizers.

In horticulture a large number of investigations were begun, and in most cases carried to a successful issue, on the home grounds, while several plantations of large and small fruits have been under the immediate care of the Station for several years.

In the entomological division one man has given all of his time to the study of insect pests, and has carried on many valuable experiments.

In dairy husbandry much valuable data has been secured, while needed instruction and help has been given to the dairymen of the State.

The experimental work in general agriculture has been conducted largely on the home farm. The most noted results were secured from the investigations in potato culture which have been carried on for four years on the same land.

By reason of the funds provided by the Federal and State Governments, the College is enabled to employ some twenty specialists, who give a part or all of their time to investigations. Only a small portion of the work undertaken can be noted here; suffice it to say that the year has been a most fruitful one in results.

PUBLICATIONS

From July 1st, 1898, to June 1st, 1899, twenty bulletins, containing five hundred and fifty-six pages and one hundred and twenty-five illustrations, were published. The regular mailing list has increased from sixteen to twenty-two thousand during the year. In August, 1898, an annual report of four hundred and ninety-two pages and one hundred and seventy-seven illustrations was issued, which embraced the treasurer's report, six reports of the chiefs of the various divisions into which the Station is divided, appendix I, which consisted of the bulletins issued during the year, and leaflets 8, 9, 10, and 11, and appendix II, which is a detailed account of the receipts and expenditures for the year. Two editions of bulletins 72, 140, and 156 have been issued. The demand for the bulletins has been so great that the regular edition has been increased from twenty to twenty-five thousand.

Five leaflets have been published during the year, Nos. 9, 10, 11, 12, and 13. The tabulated statement below gives the number of editions published this year and the total number to date:

	Editions this year	Total Editions
Leaflet No. 1	4	8
" 2	6	8
" 3	5	10
" 4	7	11
" 5	6	9
" 6	5	10
" 7	3	7
" 8	3	7
1899		
" 9	7	7
" 10	6	6
" 11	4	4
" 12	2	2
" 13	2	2

In addition to the six hundred thousand pages issued and sent out in the farmers' reading course, a large number of circulars of instruction and blanks for tabulating the results of the numerous investigations carried on throughout the State have been published.

I have said comparatively little of the educational and experimental work carried on at the University, since you are somewhat familiar with it from my communications to you from time to time, while the work undertaken throughout the State is so recent and has increased so rapidly that it has seemed wise to set it forth somewhat in detail.

NEEDS

The needs of the College become more pressing as the work expands. It is hardly necessary to again go into details as to the present condition of the equipment and quarters assigned to the College, as these matters were fully set forth in my report of one year ago, copies of which are on file in the offices of the University. I can only urge that the pressing needs of the College receive early, careful, and effective attention.

Respectfully submitted,

I. P. ROBERTS,

Director of the College of Agriculture.

APPENDIX VI

REPORT OF THE DIRECTOR OF THE NEW YORK STATE VETERINARY COLLEGE

To the President of the University:

SIR:—I have to report a steady increase in the number of students taking the regular veterinary course. Last year, 1897–98, we had 17 as compared with 11 in 1896–97. In the present year we have had 24, an increase of nearly 21 per cent over the class of the preceding year, and of considerably over 100 per cent over the class of 1896–97. A class of six was graduated.

In the present year we have for the first time, in our senior class, students who have taken the whole course in this College, after having matriculated, in accordance with the State law, on the basis of a high school education. The result is decidedly shown in a higher grade of scholarship, a more comprehensive grasp of the great principles involved in the different fields of study, and a marked tendency, as shown in the theses especially, to enter successfully on important original work. Six of the seven theses presented are based on personal research and add important facts to veterinary science, while the seventh deals with the recondite subject of toxins and antitoxins in their relations to pathogeny, prophylaxis, and therapeutics. The claim made in my last annual report that we had begun to fulfill the object of our foundation—the improvement of veterinary education—is therefore fully maintained by the work of the current year.

In addition to the veterinary students, 60 from the College of Agriculture took a special course on the diseases of the domestic animals, and from other departments of the University, 59 took work in histology or embryology, 43 in bacteriology or pathology, and 68 in physiology or pharmacology.

ANATOMY

The facilities for thorough training in anatomy have been greatly enhanced in the past year. Four mounted skeletons of domestic animals and a large number of new specimens, osteological and otherwise, have been added, furnishing ample material for studies in comparative anatomy. Under the able direction of Dr. Hopkins and his demonstrators, Dr. Scammel and Mr. Illston, the work has been more effective than in previous years.

PHYSIOLOGY AND MATERIA MEDICA

In these departments 67 students registered, requiring a large provision in material equipment, and under the able supervision of Dr. Fish and his assistant, Mr. Myers, a most successful and profitable work has been accomplished. Arrangements have been made to distribute the work over three years, in place of two, which will better subserve the interests of medicine and surgery. Much important illustrative material has been added, including models of eye, ear, brain, heart, larynx, mammæ, and digestive organs, and, among apparatus, receiving tambours, neuro-muscular galvanophore, sphygmograph, etc. Two theses for the degree of D.V.M. have been prepared, embodying the results of special investigation into the physiological action of barium chloride, and into phosphaturia in its relation to bone disease.

MICROSCOPY, HISTOLOGY, AND EMBRYOLOGY

In these departments 69 students registered, fully taxing the excellent equipment of the laboratory and teaching force and demonstrating anew their efficiency. The work done has been better than ever before. A new course on the physiology of the cell, by Dr. Kingsbury, should be specially mentioned. This was availed of by two University teachers from outside the Veterinary College. Three theses have been prepared in the department, one of which served to bring its writer a scholarship. I may be pardoned for noting the public estimation of the working staff of the department, Professor Gage being chairman of the Section of Zoology of the American Association for the Advancement of Science, Dr. Kingsbury associate editor of the Journal of Neurology, and Dr. Claypole editor of the Department of Animal Biology for the Journal of Applied Microscopy.

PATHOLOGY, BACTERIOLOGY, AND MEAT INSPECTION

This department which, it was felt from the first, should be fostered in every way and availed of, as a means of making a suitable return to the State for its bounty, has accomplished much in the course of the year, but only a part of what urgently demands attention. The department is admirably equipped for teaching, and for the preparation of cultures and serum products to be used in diagnosis, prophylaxis, and therapeutics, and these objects it has successfully fulfilled. It has also done much valuable work outside for the live stock industry of the State, in the bacteriological diagnosis of zymotic diseases and in their prophylaxis, yet in this direction its hands have been largely tied by the impossibility of furnishing expert investigation in the field, in every case in which the interests of the live stock industry were imperilled. The teaching staff is very fully occupied in taking care of the large body of 51 students in class room and laboratory, so that the time available for investigation is necessarily very limited. There is the further drawback of the lack of means to furnish material for research. The only rational remedy for this is to make the veterinary sanitary work in the State tributary to the College, and the College in its turn tributary to this sanitary work.

Yet, in spite of the insufficiency of means and of expert assistance in the field, much important work has been done on different contagious diseases, including abortion, pneumonia, distemper, swine diseases, blackquarter, infectious conditions of the udder, milk, and skin and surgical infections. The application of the Widal test to hog-cholera, and the discoveries in the bacteriology of milk are of great value to the immense interests in those lines of industry. The complete endorsement, based on experiments on infected herds, of a serum prophylactics and therapeutics in anthrax and blackquarter, as practiced by the writer for twenty years, is of the greatest importance to every state in the Union. With means for carrying out such enquiries to their legitimate conclusion in every case, this field promises most important results both sanitary and economic.

A large work has been done by the department in the bacteriological diagnosis of specimens of diseased tissues, sent by employes of the Commissioner of Agriculture, by private veterinarians, and by others. There was also a special investigation into the sources of toxic action in poisonous cheese.

The tuberculin prepared in this department is constantly increasing in favor and demand. As many as 7,750 doses were furnished for use in this State in the past year, and 2,600 in the month of March alone. Experiments have been instituted on the relative value of tuberculin derived from cultures drawn from different animal sources, but further time and means are needed to get assured results. Mallein has been called for only at considerable intervals.

VETERINARY SURGERY, OBSTETRICS, AND JURISPRUDENCE

In this department the work has been more satisfactory than ever before, partly because the students, trained from the first in this College, have come better prepared, and partly because of the constantly improving facilities for both class room and operating theatre. The clinical material, too, has come from a constantly widening area, and as cases from a distance have as a rule baffled local skill, they have furnished a succession of unusual and specially interesting cases, which greatly enhanced the value of the clinic. They have further contributed opportunities for special investigations and new departures, which have been availed of notably in methods of antisepsis and asepsis, dental surgery, management of fistulæ, vaginal inversions in pregnancy, parturient paresis, and bone diseases associated with constitutional disorders.

VETERINARY MEDICINE, SANITARY SCIENCE, AND PARASITISM

In this department 17 students pursued one or more of the courses prescribed for the veterinary student, one of these being drawn from the University outside the College. In addition to this, 60 took the short course in the diseases of animals provided for the agricultural students. The devotion of students to the work was all that could be desired. Four theses for the degree of D.V.M. have been prepared in this department, all but one founded on original investigation.

Among subjects coming up in connection with College clinics or outside consultations, the following have been made the subjects of special investigation: paresis of pregnant ewes kept in confinement, streptococcus cellulitis of the digits (foot-rot) of cattle and sheep, mycotic pneumonia in horses, contagious abortion in cows, contagious mammitis, roup in fowls.

In hundreds of cases consultations on diseases prevailing in different parts of the State have been met and advice given.

THE DESIDERATUM OF A CLOSER RELATION TO STATE SANITARY WORK

Much more good could be accomplished by the College if provision were made for taking up prevailing and contagious diseases and dealing with them more directly. This affects especially the departments of bacteriology, pathology, meat inspection, medicine, contagious diseases, and parasitism. Under existing conditions the live stock industry is largely denied the advantage that would come from a close supervision by experts in animal diseases and from the more extended use of the State veterinary laboratories especially provided for such work. Again, much of the valuable pathological material which should contribute to render the education given in the State Veterinary College more thorough, practical, and efficient is allowed to go to waste through its falling into hands that do not appreciate it and cannot utilize it. What is wanted is a statesmanlike movement which will avail of the accumulated knowledge and skill of the Veterinary College for the benefit of the live stock industry, and that will at the same time secure the veterinary pathological products of the State for the perfecting of the education furnished in the Veterinary Medical College of the commonwealth.

NEEDS OF THE VETERINARY COLLEGE

The department of anatomy is in much need of a direct supply of warm water in the laboratory, and shutters for the ventilating openings, to prevent undue entrance of cold air in draughts when the steam is shut off. It would also be greatly benefited by an abundant supply of anatomical models, and preparations, and lantern slides.

The departments of physiology, histology, bacteriology, etc., find that the great influx of students from University courses threatens to overcrowd the lecture room devoted to their use, so that the second large theatre provided for in our original plans, but omitted for lack of means, is now felt to be a real desideratum.

The department of embryology still feels a pressing need for models and diagrams, and could spend $500 to $1,000 very profitably in this direction.

The department of bacteriology and pathology would be greatly benefited by the appointment of an additional expert who would be at greater liberty to spend time in the field investigating outbreaks of contagious diseases and pursuing subsequent investigations on the *materies morbi* in the laboratory. This would make the expert services of the College much more universally available by the great live stock industry and by the public health, and would at the same time subserve the educational work of the College and make that much more perfect. Apart from this, an appropriation of $600 will be essential to the effective working of the department as at present conducted.

The department of surgery demands an appropriation of $250 for new instruments, index cards, labels, and museum equipment, and renews its application for a clinical assistant drawn from the recent graduates, at a salary of $500 per annum. The steady increase of surgical cases, while of the greatest advantage to the student, taxes the time and endurance of the professor to a serious extent.

The department of medicine and sanitary science would be greatly profited by additional instruments and buildings, especially a dark chamber for ophthalmic examinations and stalls for contagious and experimental subjects. Should we ever secure another expert bacteriologist who could do work in the field as well as in the laboratory the choice should fall on one who is no less accomplished as a veterinary pathologist and sanitarian, and who could represent medicine and sanitary science as fully as bacteriology. The desiderata in two departments would thus be at once supplied in the most effective and economical way.

The source of the College income and its definite amount enjoins upon us to fill our most urgent needs by a redistribution within the prescribed limits, but at the same time we recognize that any single addition to our funds up to $30,000 would add greatly to the efficiency of our work. A still better alternative would be the permanent addition of $10,000 per annum to our income, as from this we could slowly build up our equipment and provide for the much-needed work outside.

ROSWELL P. FLOWER LIBRARY

Enclosed will be found the report of the librarian, showing a total of 1,210 books and a number of pamphlets, a supply of 34 periodicals on professional subjects, and a reserve of $2,118.94 of the Flower gift unexpended. The library has been in constant use by teachers and students and has splendidly accomplished the objects of its generous founder.

SEMINARY AND SOCIETY OF COMPARATIVE MEDICINE

These have in the past year continued to fill a great need in training the student in special research, in the presentation of the results of such work, and in parliamentary methods.

Respectfully submitted,

JAMES LAW,

Director of the New York State Veterinary College.

APPENDIX VII

REPORT OF THE PROFESSOR IN CHARGE OF THE COLLEGE OF ARCHITECTURE

To the President of the University:

SIR :—I have the honor to submit the following report on the College of Architecture:

The end of the second year of the new regime witnesses an encouraging amount of progress. In spite of cramped quarters and poor light our students have worked with the enthusiasm and zeal which distinguished them last year. This spring every available inch of space in the attic of our building is being used either for architectural draughting or for clay modeling. The weather so far has fortunately been cool, but when the temperature rises we shall be at a loss for space, as these attic rooms will be practically unbearable.

In point of numbers the College has remained about as it was last year. It has benefited by several important additions to its equipment, viz.: a superb set of architectural drawings bought of Monsieur Jean Hulot of Paris, and a set of very interesting and beautiful pieces of pottery, tiles, and architectural ornaments, presented to the College by William Hagerman Graves, Cornell '90, who is treasurer of the Grueby Faience Company of Boston. This Grueby Faience is being used in the classes in still life, and is a valuable addition to our material for this work.

The exhibitions of the College have been attractive intermissions in the work of the year, occurring at regular intervals, and attended by Faculty judgments and by public criticisms. Simultaneously with these local exhibitions, the best work of the College has been shown in New York, Philadelphia, Chicago, and St. Louis. We have heard directly and indirectly that our work has received very favorable comment. The policy of sending out our work for exhibitions in the various large cities is fast making our College known in quarters which have heretofore shown but a passive interest in us.

The year 1899 has seen the inception of several new courses and the new Traveling Fellowship. Last October the competition for the Traveling Fellowship resulted in the selection of William Herbert Dole of the class of '94, Cornell. Mr. Dole came to us strong in architectural draughtsmanship, a most fortunate circumstance for himself and for the College, and he will leave us, we believe, a well-rounded, symmetrically developed architect, ready to cope with large and small problems and with the ability to execute work which will reflect credit on his *Alma Mater*. Since the first part of February Mr. Dole has been studying the problem of a College of Fine Arts for Cornell University. The drawings resulting from this study will be the largest, the most comprehensive, and, we believe, the best set of drawings that ever have been executed by a student of architecture in this country. We realize the extent of our assertion, but we think the drawings themselves will confirm all that we say.

Besides showing what can be done here by advanced students of architecture, these drawings will do great service in explaining the chief aim of the Faculty of our College, viz.: to establish a College of Fine Arts at Cornell, where all the arts may be studied side by side in an art world within the limits of a group of buildings. Some idea of the immense size of the group may be gained from the dimensions of the lot necessary to contain the buildings—a rectangle about 500 feet deep by 1,200 feet long. It is our intention to exhibit these drawings in the principal cities of this country in the hope that some wealthy art lover will here see his great opportunity. Cornell is well fitted and well placed to become the art center, the nucleus for an art growth, in a community embracing Buffalo, Rochester, Syracuse, Binghamton, Elmira, and the many other smaller cities in this State, while neighboring states would doubtless join with these cities in enjoying the advantages we would hold out to them.

Of the new courses begun last fall, that in working drawings under Professor Martin takes the most prominent place. In this the junior class is given the opportunity of working out all the practical questions of house building, from the shape and projection of a main cornice to the design and construction of a fireplace and its flue. We cannot guarantee that our students will be experts in these matters, but we can show them the importance which such details bear to an architect's practice.

Professor Brauner's course in the history of art has been attended by a number of students from the Academic Department. The lecture room has often been crowded to its utmost capacity. For this course a collection of nearly 600 photographs was purchased, from which lantern slides have been made.

During the winter term Dr. Ries has given our students an exceedingly interesting and instructive two-hour course on clay and building stones, in place of former courses in geology, mineralogy, and lithology. The experience of this expert in his investigations for the United States Government has made his knowledge of great practical use to architects.

During the year a number of lectures have been given by eminent men from distant cities. Professor Everett of the University of Pennsylvania gave four lectures on decorative subjects; Claude Fayette Bragdon, a Rochester architect, talked on pen and ink rendering; Charles T. Harris, President of the Celadon Terra Cotta Company, lectured on roof tiles; and William L. Price, an architect practicing in Philadelphia, talked on house building. The good that is gained by individuals through these talks is not so much from the direct information given as in the broad view of the allied arts and industries that is so indispensable a part of the training of an architect. It is not possible to learn how to render acceptably in pen and ink by hearing someone discourse upon the subject. But if the lecturer inspires one or two men to work for the mastery of the art, then is the lecture worth much to the College.

The Annual which was published last June was not a good piece of half-toning and printing, but in spite of its defects, it did the College a deal of good. Graduates have written expressing their satisfaction that the College is keeping in line with other institutions by publishing an Annual or Year Book.

The College furnished two undergraduates to the volunteer army in the war with Spain—Clifton Beckwith Brown, of Cleveland, Ohio, class of 1900, and Dwight Homans Wagner, of Wheeling, West Virginia, class of 1898. These men enlisted in the 71st New York Regiment, and with several other Cornellians were enrolled in Company M. They took part in the battle of Santiago and Brown was killed at the front of his regiment soon after he had gone into action. It had been Brown's intention to return to the University and complete his course. By his death the College not only mourns one who was thoroughly respected and liked by every one, but it loses the chance of developing one who showed marked talent and the genuine characteristics of a strong designer. His work was marked by an original conception, and while, like other student work, it was sometimes crude or not well presented, it was always interesting. His classmates have arranged for a beautiful bronze tablet by Bela Pratt of Boston, whose work in the Congressional Library in Washington has placed him in the front rank of America's sculptors. Wagner, who served his country with Brown, was more fortunate in living to see the good which is resulting from this unhappy war, but he has been at death's door for weeks from a fever and is only now convalescing.

As the purpose of this report is to declare the needs as well as the doings of this College, I shall dwell upon the urgent need of more space, especially for the work in drawing and modeling. At present the Museum of Architecture is turned into a free-hand drawing room, and the easels and chairs are so close together it is very difficult for the professor to make his way. This congestion renders it practically impossible for the students to stand away from their work to view it critically from a distance (a very necessary and usual custom in this work). In this room have also been placed large stands for the work in still life. A visit to this room, which is now more of a conglomerate museum than ever, will convince one that in this particular we are wretchedly deficient. The students are very anxious to study from the human figure. Their zeal was shown last winter by a volunteer night class, which engaged a model and under the instruction of Professor Brauner tried to establish on a firm basis a life class. The crowded quarters, the poor ventilation and wretched light made the venture a praiseworthy but vain attempt. The students have asked whether the College cannot establish this work, and our answer cannot be satisfactory. We need immediately enough space for two large drawing studios with north light, one large room for clay modeling, and store rooms. If, in such an addition to our present quarters, space should not be provided for twice the number of students that we now have, a great mistake would undoubtedly be made.

Professor Everett lectured on decoration, covered textile fabrics, wall papers, flat decorations in pigments and in mosaics, and stained glass. Next fall he will lecture on furniture, considered aesthetically and historically. His lectures have shown another great need, viz.: a special course in decoration covering all these fields and others not mentioned. Cornell University, because of its co-education, is especially fitted for this course, for decorative work is fast becoming a very attractive and useful field for women. As a bread-winner it is more serviceable than many of the professions that women now take up, while women are by nature well fitted to study the delicate subleties and harmonies of color. This course would be a part of the College of Fine Arts, and before the establishment of that College, could be cared for by the College of Architecture. The architects would have some of the regular decorative work introduced in their list of required work, while the students in decoration would take what architectural training they should need under the professors of architecture.

It is perfectly plain to the professors of architecture that the facilities for carrying on the work in drawing are utterly inadequate. It has also been evident that there is need of a new professorship in decoration ; a special course in charge of an expert who understands the manufacture as well as the designing of various products of the decorative industries. The space needed can be contained in an annex to Lincoln Hall at its southern end. The professors of architecture stand ready to make all necessary plans and to supervise the erection of such an addition—at no cost to the University. They make this gratuitous offer of services in the hope that the Board of Trustees will recognize all the more forcibly the conviction which exists in the minds of the Faculty of Architecture.

Respectfully submitted,

ALEXANDER BUEL TROWBRIDGE,

Professor in Charge of the College of Architecture.

APPENDIX VIII

REPORT OF THE DIRECTOR OF THE COLLEGE OF CIVIL ENGINEERING

To the President of the University:

SIR :—I have the honor to report that the present condition of this College of the University is satisfactory, and the work done during the present college year is a considerable improvement over that of the previous year, while further changes contemplated at present will probably yield like results in the coming year. The only subject of instruction that has failed to give the usual results has been the work of surveying for the freshmen and sophomore classes. The large number of students made it impossible to attend properly to their needs in the field, even though thirteen members of the senior class volunteered to inspect this work in addition to the regular College force.

I am glad to report that the outlook for our great hydraulic laboratory is very encouraging in so far as may be judged by external appreciation of its capabilities. At the request of the United States Deep Water Ways Commission we were obliged to suspend some work under way in order to carry on experiments very much needed by them for the purpose of finding the degree of accuracy of certain co-efficients determined by Bazin upon the flow of water over weirs, and also their general application under a considerable variety of conditions as to their form, and depth of water over them. The expenses so far incurred have been defrayed by the Commission, and also they have here several engineers to assist in the experiments. This work is being done under the supervision of this College through Professor G. S. Williams on the part of the College and through George W. Rafter, C.E., on the part of the Commissioners. The work has an important bearing, and will be resumed later on; for the haste occasioned by the needs of the Deep Water Ways Commission prevents our giving attention to many sides of this problem, and these must be finally completed under more favorable conditions than obtain at present.

When we bear in mind the magnitude and the meaning of the work of the Deep Water Ways Commission, the existence of this laboratory is fully justified. If to this we add the much larger number of hydraulic problems that cannot be properly undertaken without the aid of this central station for research, the University authorities will find a complete vindication of the special expenditures this laboratory demands.

Taking into account the requests already at hand for special investigations, I estimate that there are enough questions forthcoming to keep us busy for the next five years at least; and there are great probabilities that future demands for investigation will never cease, in addition to the securing of improved conditions for the fundamental teaching needed by our regular students in hydraulics.

I do not know if anything has been done by the University authorities to interest the War Department and the Engineer branch of the United States Army in the work of this laboratory, with the object of obtaining financial aid, as recommended in my last report on this subject.

I again respectfully repeat the urgent necessity of improvement in our geodetic training observatory. It seems a pity that an expensive equipment, which has no superior for its purposes in any other educational institution, should be exposed to rapid deterioration under the conditions that our students are obliged to use it. Its monstrous and shabby ugliness defaces our beautiful campus.

The temporary check given to our number of students by the largely increased requirements for admission seems to have lasted only one year, and our classes have increased to such an extent that our present quarters are utterly inadequate to take care of them properly. Additional and more severe requirements will go into effect next year; and though this will without doubt diminish our numbers, past experience seems to point to the probability of again receiving a larger number of applications than we shall be able to properly care for. In this connection I may say that the increased requirements for admission have completely changed the character of the applicants for professional training in this College. A considerable and increasing number of applications come from students who have taken from one to three years at other institutions and come here during the last one or two years of their courses, so that practically they graduate as Civil Engineers with five or six years of special training. Although this might be considered desirable under some points of view, strong objections may be raised against this method of admission, which grow out of the difficulty of estimating the real value of the preparation of these classes of students, either by their certificates or by estimating the rank of the institutions from which they come by an analysis of their courses of study. We are finding out that their heterogeneous training does not yield and cannot yield the substantial result which might be expected from the longer time they are under training. Possibly these evil effects are the necessary result of the unpreparedness of the ambitious schools which give the imperfect training of which I complain. Possibly in the near future intermediate professional schools may spring into existence, as happens in France, whose engineers, as they enter the École des Ponts et Chaussées enter a purely professional school from which all preparatory work has been eliminated. If this is too sanguine a hope to be realized within a few years, remains to be proved. The one thing certain is that this roaming from one school to another, struggling for the obtaining of as many credits as possible in order to shorten the time of instruction, is exceedingly undesirable; and it seems quite necessary that some strong effort should be made in the organization of all the schools of the country by interstate legislative enactments. Although this will finally come to pass, it now seems well nigh impossible of attainment. Another solution may be found by requiring no more preparation for admission to this College than is asked for by the average of the best schools, and adding one more year to our curriculum. This question is under active debate by the Society for the Promotion of Engineering Education, but with small probabilities of a speedy solution.

It is my intention to consider, with the members of the College Faculty, various plans to make our admission requirements reasonable and suitable for our purposes; for we now require subjects which, though useful in the abstract, might be easily replaced by others of equivalent mind training power, which, moreover, are integral parts of the preparation rigidly connected to subsequent work, and obtainable from preparatory schools, if proper and suitable pressure be exerted.

I am sorry to say that the Legislature of the State, by misconception of facts on the part of some of the Senators and direct and blameworthy misrepresentation made to the Conference Committee, saw fit, without proper investigation, to abolish the Meteorological Bureau of the State of New York. This was done after I had received every assurance that the item would be placed, as it was placed, in the Supply Bill, and there was no possible way of my knowing what had been done until the Legislature had adjourned. Although that Bureau had no official connection with the University and was created for the benefit of the entire people of the State, its suppression causes considerable damage to vast interests, the importance of which can not be exaggerated; and, incidentally, curtails much information that would have been of use in the new hydraulic laboratory of this College; for, although the co-operation of that Bureau with the National Service has always been faithful and loyal, the direction of this work had in mind the development of necessary information under engineering and sanitary points of view. Whether such work can be continued under other auspices or whether it will fail altogether is a matter which has given me much anxiety; and innumerable letters lately received upon this point seem to show that I am not the only one sharing these fears. Whilst I am not inclined to believe that the abolition of the Bureau has been done with evil intentions, it is nevertheless a pity that a work which only costs the people of the State seven ten-thousandths ($\frac{7}{10000}$) of a dollar per head will by its abolition deprive the people of the State and of the country of advantages, and cause losses, that may be reckoned by many hundred thousands of dollars.

Two continuous courses of lectures by non-resident lecturers have been given this year: one by E. T. Turner, C.E., upon the relations of meteorology to certain classes of engineering designs and sanitary problems. These lectures were based mainly upon the results obtained at this University during twenty-six years of observations, begun at private expense, carried on for a few years longer at the expense of the University, and during the last ten years, under improved conditions, by appropriations from the Legislature of the State of New York. The other course of lectures was given by Frank W. Skinner, C.E., upon what, for lack of a better name, might be termed field engineering. In the building of bridges, tunnels, foundations, dams, canals, light-houses, water-works, sewers, and many other structures and kinds of surveys, the school can do very little with those necessary details of execution and administration which devolve upon the practicing engineer. The engineer in active practice has to superintend the work of more or less competent contractors or undertake constructions in which are often involved vast sums of money, the safety of human life and his own reputation. Hitherto no school or text-book has taken care of this important portion of professional education, and the relations of Mr. Skinner to the Engineering Record have offered an opportunity to place before our students in a systematic manner, information hitherto inaccessible to any single engineer or to any school in any land, with reference to the practical experiences that are either useful, or dangerous and to be avoided; what risks may be taken; how emergencies may be met in ordinary and extraordinary structures; and this information bears very directly upon the economy and efficiency of the science and art of building. It enables the young students to have some idea, from the inception of any project, of the clear and definite views of methods of attack and development of the work in hand and to select among theoretical methods those best adapted to efficient and economic construction. Ordinarily this knowledge is very difficult to obtain. It is considered practical and entirely personal, growing with experience in long and varied practice. Many engineers never acquire it and are obliged to depend upon those who may have a more or less exact available training in this regard; and through a lack of this so-called experience, many practitioners are handicapped and led to commit humiliating errors. The young engineer has rarely opportunities to learn particular details in special branches in which he may be employed, and even the experienced engineer, usually, is well posted only in his own special field. No data have ever been collected or published in this regard in complete or practical form; no instruction in it has been available and no text-book ever prepared. In a large number of cases contractors and superintendents apply practical methods of construction in ignorance of true scientific principles, often under the direction of engineers unfamiliar with the necessary details. Although it may seem strange, it is nevertheless a fact that few engineers in charge of works have any taste or inclination to describe processes or failures, excepting in the case of a few of the younger men, still fresh from school and ambitious to find mathematical solutions for the causes of failure. For these reasons the most valuable kinds of information remain very frequently unrecorded. Besides the foremen and elder engineers, few persons have the interest, intelligence, or access to these kinds of details and facts; and even in the transactions of engineering societies, but little of these data are found complete or arranged systematically for the use of the young practitioner.

The course of lectures given by Mr. Skinner is prepared from notes, sketches, photographs, and records, after many years of active service in designing, office and field work; from a large amount of personally collected data from contractors, foremen, superintendents, and practical builders; from a compilation and condensation of the principal articles published by leading technical periodicals and transactions of engineering societies, and from data collected during twelve years in the special department of structural engineering in the Engineering Record. The data have been secured under exceptional advantages and under constant training for its concise presentation, and embraces what is probably the only collection in existence on these subjects, which would be impossible to replace, and is constantly increasing bv the wealth of matter contributed by engineers and contractors in every state of the Union and in foreign countries These lectures do not provide a finished course in field engineering; they do not even furnish complete data for designing structures; but they give a general résumé of the principal divisions of the art of building, explaining systematically ordinary methods and appliances, the conditions under which to use them, the manner in which they are handled, and the results obtained in field maneuvers, with actual illustrations of important structures in process of building.

The division of the subject into general classes mentions the conditions likely or possible to exist, the methods that have been developed to meet them, the standard plant and machinery employed illustrated by photographs and diagrams of typical importance, pointing out advantages and defects, so that the methods and progress of construction are shown divested of confusing or unimportant features. Finally, the entire question of field appliances is made of prominent value by full references to the reports, transactions, or periodicals which contain the scattered records of the systematized work.

The illustrations for these lectures have been prepared at a great expense, and if they can be continued, as it is hoped they may be, Cornell will secure distinctly special and valuable practical instruction which cannot but prepare its graduates for more efficient service and secure their rapid professional preferment, by giving them advantages that have not yet been provided at any engineering college, and which will form a feature of advanced equipment impossible to secure through any regular curriculum now in operation. The existence of this course of lectures will afford important and evident proof of the superiority of this College of the University over any other similar school.

The question of a new building, to which I have referred in my annual reports for several years past, seems to be still undecided; and in the meantime several requests for additional buildings have been granted to other Colleges of the University. I would respectfully suggest that a meeting be held with some committee of the Board of Trustees and the President of the University, so that all the parties interested might jointly explain the degree of urgency of their claims. I have no doubt that from such an exchange of ideas the case demanding greatest urgency could be readily found, and that all parties interested would readily agree upon what might be best to do to improve the situation.

The conduct and bearing of the students of this College leave nothing to be desired. There are neither rules nor regulations promulgated for the conduct of students in this College—neither records of any breach of propriety nor disorder during the year coming to a close. This system of complete trust and reliance on the fair-mindedness of college men has the double good effect of reducing to a minimum the number of thoughtless casualties which create disturbances, and constitutes the entire student body into an inoffensive, effective police, which represses in time, and all the time, the over-buoyant spirits of the few youths that might feel inclined to forget their individual responsibilities towards their *Alma Mater*.

I have the honor to add in another place considerations relating to matters of no special public interest.

Respectfully submitted,

E. A. FUERTES,

Director of the College of Civil Engineering.

APPENDIX IX

REPORT OF THE DIRECTOR OF THE SIBLEY COLLEGE OF MECHANICAL ENGINEERING AND MECHANIC ARTS

To the President of the University:

SIR :—The Director of the Sibley College of Mechanical Engineering and the Mechanic Arts respectfully submits the following statement relative to the work of the year 1898–99 now closing :

The collegiate year 1898–99 has been one of most profitable and satisfactory work, uneventful but none the less filled by fruitful labors in every department of the College. The latest form of our curriculum has been now well-settled into shape and is proving more than had been even hoped, in provision of an admirable course of professional instruction, in its improved character and greater range and in the improved quality of student demanded from the preparatory schools. Its added year of special preparation gives us entering classes practically one year ahead of the earlier candidates for admission, and of such increased strength and maturity that it is thought that they accomplish, in their four years of college work, the equivalent of five under the older arrangement and, at graduation, probably possess not only a much better general education than formerly, but an enormously better professional training. No better evidence of these facts can be asked than the promptness with which our large classes are now absorbed into the great industries of the country and, of late, the rapidity with which these later graduates have acquired positions of responsibility.

The attendance has now begun once more to increase, somewhat after the manner of earlier years of comparatively low entrance requirements and rapid growth. The minimum, 466 undergraduates, was passed last year, and the total for the current year is reported in the last edition of the Register as 492, a gain of about ten per cent. Including special students and graduate students, candidates for the Master's degree, we have something over 500 students ; a figure which was, not many years ago, looked upon with serious apprehension as too heavy a load to be borne.

Graduate students, from other institutions, mainly technical but often academic, are candidates for the Master's degree in Sibley College, or, as in one instance, at least, studying without seeking an advanced degree, and many such students are enrolled in our list of candidates for the first degree. We have 10 candidates for the Master's degree, 1 graduate student not a candidate for a degree, and about 40 seeking the first degree, making the total number of candidates for the degrees in mechanical engineering, in its various divisions, 502, and, with a dozen special students, or more, about 515. The proportion of graduate students in the upper classes is exceptionally large, amounting to about one third of all under that classification in the University. They constitute, as might be anticipated, the most mature and scholarly portion of those classes and promise to promote in an exceptional degree the standing of the profession and the reputation of the University and of the College. The acquirement of a good academic collegiate education in advance, then his entrance upon the professional course of study and training, constitutes the ideal preparation of the man "for the sequel of his life."

The following is a summary of the census of Sibley College for the current year and a comparison, as customary, with the totals for earlier years:

SIBLEY COLLEGE OF MECHANICAL ENGINEERING

Senior Class	69
Junior Class	91
Sophomore Class	143
Freshman Class	181
Special Students	17
Total	501

UNDERGRADUATE LISTS, 1885—99

	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	'98	'99
Enrolled	63	106	168	220	283	369	428	501	546	556	485	493	466	463	501
Graduated		*5	19	22	32	54	52	90	93	81	90	110	130	87	89

The effect in reduction of numbers by the inauguration of the advanced requirements of 1894 is plainly seen, as well as the prompt recovery of the older rate of growth immediately upon its effect being completely felt in the entering classes, 1898, and the consequent cessation of the diminution of the totals. Growth henceforth, although resumed at a somewhat intimidating rate, can hardly be expected to continue at the rate of ten years ago, but it will undoubtedly make imperative the provision of larger and better quarters and equipments in all departments very soon. In fact, this is a condition which confronts us in several departments and in serious degree already.†

The resumption of growth, notwithstanding the exceptionally advanced character of the present course of instruction and training in professional subjects, shows how healthy is the condition of the College

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*Until the year 1886 no students in electrical engineering were formally registered in Sibley College.

†The apparent discrepancy between the numbers of the senior class as given in the first and the second of the above lists comes of the fact that many students registered as juniors, etc., on the books will have their courses completed in time to graduate with the class of '99. Technically, a student lacking a single completed entrance subject is registered as a "lower classman;" but he usually passes the subject in the end and graduates with his class.

and especially how completely is the old business tradition, which placed every obstacle in the way of the college-bred professional in engineering, broken down. It was, a few years ago, difficult to persuade the the older type of business man to take into his employ a graduate of even one of the best of our engineering schools, but to-day the same man is constantly asking for such lieutenants and as constantly placing them in positions of greater and greater responsibility, until the visiting foreigner is astounded to find that, as he now often reports on returning to his transatlantic home, "The business of the great manufacturing establishments and engineering works of the United States is conducted by young men hardly a dozen years out of school."

The combination of knowledge, often of learning, with a trained mind, a quick wit, readiness in times of emergency and power of direction of men; itself coming in large degree from their recognized pre-eminence in knowledge of the details as well as the principles of the business, which is exhibited by the best of these young men has no parallel in any other class. They unite the scientific method and the learning of the schools with practical knowledge and an aptitude for and acquaintance with the minutiæ of their professional work as no other class of man possibly can. These alumni of Cornell University and of Sibley College are, each year, doing their full share of the work of the world and a rapidly increasing proportion of those tasks which involve large responsibility, a special quality in the man, and peculiarly great professional ability.

With this unexcelled, perhaps quite unrivalled, course, the College, notwithstanding the difficulty of securing entrance into its courses, continues to send out the largest classes of professionally trained mechanical engineers graduated in the United States and, so far as known, in the world, and it would seem that the difficulties presented in its entrance examinations and in its courses have little weight in the balance in comparison with the attractions of its exceptionally useful instruction and its rare opportunities, in shops, laboratories, and drawing rooms, as well as class rooms, for the acquisition of professional knowledge and of that practical acquaintance with the most important data and methods. as well as the fundamental sciences which, only, can insure professional success in these days of united science and art, in all the professions. We now send out, annually, a hundred such well-trained men, and they may be relied upon to do their full share in the work of the world and to do it well.

Our graduates are still finding their way into the professional associations and learned societies in large and increasing numbers, in very much more than their normal proportion. They present more than a full proportion of the important papers read at conventions and are finding themselves put forward as officers and on committees to take charge of work which can only be well-done by men thus scientifically trained. Forty-eight per cent of the papers read before the American Society of Mechanical Engineers at the Washington meeting, during the past month, were presented by Sibley College men, usually alumni holding its Master's degree. Graduates in this department of the University are also still called for in increasing numbers to take part in professional instruction of this kind in other colleges and technical schools. In a number of important institutions, the courses have been constructed and mainly carried into effect by alumni, and we are represented by one or more such men in nearly every great institution, and in very many of the smaller colleges and schools of engineering throughout the country and even in some foreign engineering schools. These facts are most encouraging as indicating the success of Cornell University and of Sibley College in their endeavor to carry into effect the plans of their Founders, and we may well take pride in the progress made.

Yet there is one intimidating aspect of the case : the demands of the growing technical schools and colleges of the country and of the profession, together with our limited means, are continually depriving us of good men on the staff of instruction just as they have been made, by experience and training and through the "survival of the fittest," almost indispensable to our own work. We are unable to offer men of the character of those indispensable to highest efficiency of such professional work—combining theoretical learning with practical wisdom and experience in professional departments—such salaries as business can readily promise. We need the best and strongest men of the profession and can only pay the salaries of inferior men ; we absolutely require men of talent and high market value and can only offer them half or a fourth that value—plus an intellectual opportunity. The latter does, in fact, count for the difference, until other opportunities present themselves which are, for the time and for the purposes of the teacher, still greater. He then goes to another college as a professor of his specialty or returns to business to assume a position of larger responsibility and of commensurate returns. This state of affairs can never—perhaps it would be right to say should never—be altogether changed. It is a good thing that Cornell University should thus send out teachers and leaders in professional practice as missionaries in both fields ; but each experience is, to us, a trying one, and it may prove a process having serious results if it should go too far ; as is always liable to be the case in times of business revival like the present. It completely wrecked one of our departments a year ago and has threatened us seriously this year. Several of our instructors have accepted positions at greatly increased rates of compensation ; vacating positions in Sibley College which it is peculiarly difficult to find specialists to satisfactorily fill. This is the penalty, at once, of our poverty and of our reputation and standing, It should have a valuable outcome in calling attention to our work and its fruits and in aiding the University to secure private and public support in departments in which so much can be done for the "industrial classes" and for the State.

Sibley College men were, at the date of the last of this series of reports, passing examinations for admission into the U. S. N. Engineer Corps, and most successfully. No case has yet come to the knowledge of the Director of a Sibley College man failing to pass those examinations, except where the failure occurred in the surgeon's department—usually due to defective eyesight. Of those passing the examinations a considerable number—about 25, as reported—were given appointments and served in the war with Spain, at Manila, at Santiago, and in every engagement of any magnitude from the beginning to the end. It happened that several had already entered the service when the war was inaugurated, and they participated in the first movements of both our fleets. They are now, in most cases, discharged, and have brought home most satisfactory commendations from the officers under whom they served. They proved, as the Engineer-in-Chief stated, precisely the kind of men needed in such positions—intelligent, ambitious, active, discreet, and well prepared to take hold of the practical side, as well as to apply effectively their scientific knowledge. Several still remain in the naval and the revenue services. Those returning to private life promptly find positions of honor and profit in business. They have made a noble record for themselves, for the University, and for their College.

The equipment of Sibley College, extensive and valuable as it is, is nevertheless capable of profitable extension in many ways, and, in a most desirable manner, of promoting the already rare efficiency of the work of the various departments and schools of the College. It has been increased during the past year, as usual, by many contributions from manufacturers and friends of the College, and it grows steadily through such accessions; but it has not received any important additions in some departments in which our opportunities are greatest, and no systematic development of any branch has been possible to any large extent. The opportunity for profitable employment of capital in Sibley College, in considerable sums, in this direction is exceptional and abnormal. While the completion of the projected plans of the Sibley College structure, as laid down during the life of the Founder, will afford opportunities of special interest to his family and friends, it is by no means the fact that these constitute all, or even the larger part, of the opportunity for such good work which has grown out of the philanthropic and statesmanlike purpose of the builder of Sibley College. We need already much more space and shall, it now seems certain, in the early future need fully as much for the purpose originally contemplated in the erection of this structure as even Mr. Sibley's plans, then looked upon as so ambitious, were intended to provide. Still more and very different requirements are now arising and becoming peremptory.

Our Graduate Schools of Engineering need provision, each for its peculiar work. The School of Marine Engineering has proved a great success and is supplying to all the great shipbuilders their choicest men. It now can well justify the application of considerable capital, if an investor interested in this direction can be found, in the completion of the plans for its great experimental department, in form such as have now come to be recognized, abroad particularly, as the fundamental basis of the modern applied science of naval architecture and shipbuilding, and for its development in many ways in which progress will be simply proportional to the supply of means for the work. The Railway School has, in a single year, sprung into prominence, and is attracting many students. It needs a friend particularly interested in and familiar with railway matters, who can furnish it means for development of what promises, as predicted by the Director of Sibley College at the time of his installation, to become a department of such importance, both in relation to the College and the University, and to the railways and the country, as can, today, hardly be realized, even by the professional. Its opportunity is simply proportional to the magnitude of the railroad interests of the country.

For the proposing investor in this class of securities, it offers unique opportunities for doing good and for acquiring fame in the endowment of the chair, the erection of suitable buildings and the supply of a proper equipment for instruction, for practical illustrations and for the experimental investigation of problems having practical importance in railway work.

Our department of electrical engineering has come to be one of the leaders, even if we may not fairly claim it to be the first, among schools of that character, and will justify by its admirable work precisely such support and protection in its further development as would be at the moment so helpful in the preceding case. Capital for the endowment of the chair at a liberal salary, the provision of space and equipment in steadily increasing quantity and improving quality, and suitable provision for giving development to its various divisions in the arts and applied sciences, especially in shopwork and dynamo-construction and in laboratory work of experiment and research, would benefit the country as similar amounts invested nowhere else in the country probably could.

Perhaps the most pressing needs and largest opportunities of this sort, especially for those interested in the advancement of the mechanic arts and the applied sciences of engineering, are those to be found in the department of experimental engineering; where, under the most awkward of embarrassments due to lack of space and proper constructions of buildings for its purposes, by far the most extensive, and perhaps it may even be said the most impressive and important, work of the kind is being done. With buildings and equipment sufficient in amount and precisely adapted to its varied and far-reaching work of scientific investigation of engineering problems and of training young engineers in the most advanced and perfect methods of the present and coming time, this branch of our work could readily be made fruitful of many more and marvellously productive researches, as well as of the most useful and helpful instruction. It now occupies buildings entirely unfitted to its work and which are, furthermore, needed by their real owner, the department of mechanic arts, for the long-wanted division of electrical engineering construction and for other still undeveloped branches of tool-work. In fact, a laboratory of research in mechanical and engineering science, which should include, or be paralleled by, a laboratory of railway mechanics and applied science, and by a laboratory of marine engineering research, operating in connection, each, with its department of the College, graduate and undergraduate, would probably result in greater good to the people, and to the young men coming to Sibley College for practical and scientific education in their chosen profession, if liberally endowed and handsomely supported, than could any other imaginable investment in the promotion of education of the people "in the arts and professions of life," as Mr. Cornell and Mr. Sibley would have put it. This is the opportunity of the time for any man equal to meeting it. No greater will be likely to offer in our generation.

Meantime, we have cause to be grateful to many of our friends who have, each in his small way, assisted in the promotion of this great enterprise during the past academic year. The aggregate of such accessions is large and in many cases the sacrifice made by the friend of this great work who has thus aided us has been as large as any made by wealthy promoters of such work elsewhere. There is opportunity at Cornell University for an indefinite amount of such good work whether in large amount or ever so small. It is all needed and it all helps on a great enterprise which will, each year, have larger opportunities for good.

Meantime, also, the Faculty is doing, outside the class rooms and in excess of specific demands from the University, a very great work. The time given to research, to the preparation of professional papers, to contributions to the proceedings of professional and scientific societies, and to many other branches of study and research having peculiar value to the world at large, as well as professionally and in the cause of education, are in some sense a measure of this voluntary expenditure of time, strength, and talent. A study of the President's customary summary of the work of the Faculty in publication will perhaps give the best idea of the extent to which this education of the people and promotion of high professional ideals is progressing through their endeavors.

The Faculty may, however, rely with most pride and satisfaction, in justification of their frank presentation of their needs and of the opportunities to outside friends thus presented, upon the testimony given, regarding the extent, and especially the quality, of work performed by them, by the character of the classes graduating, and they take most pride and satisfaction in sending out into the profession this body of one hundred men each year, able, strong, talented, and exceptionally well-prepared to undertake the solution of the great problems of future engineering, to reflect honor upon themselves, upon Sibley College, and upon Cornell University.

Respectfully submitted,

R. H. THURSTON,

Director of the Sibley College of Mechanical Engineering and Mechanic Arts.

APPENDIX X

REPORT OF THE DIRECTOR OF THE MEDICAL COLLEGE

To the President of the University:

SIR:—I beg leave to present the following report upon the Medical College for the year just closed:

It was the first year of its existence; this, together with the limited amount of teaching space, must account for the imperfections which existed. Reference to the catalogue will show that the school must also occupy for another year its present quarters, as the new and spacious building in course of construction on First Avenue opposite Bellevue Hospital will not be ready for occupancy till about March next. In view of the obstacles surmounted, in an undertaking of such magnitude as the establishment of a medical school of the present day, the Faculty feel they have some cause for congratulation upon the work accomplished.

The total number of students registered is 278, of whom 252 are men and 26 women. These students are divided between the several classes as follows: first year, 104, second year, 79, third year, 77, fourth year 12, students taking special courses, 6, total, 278. This exhibit shows that the College enjoys the rather unusual distinction of beginning its career with a full set of classes, so that it can present to the University a graduating class for each year, beginning with this the close of its first. The large majority of these students comprised the classes which followed the Faculty from the University of New York, when, for various reasons known to you, it severed its connection with the latter institution. A considerable number belonging to the Bellevue Hospital Medical School also followed to the Cornell Medical School certain of the leading professors of that institution, who secured appointments in this College.

The remainder of the class is composed of students from other several schools, who have been attracted to us by reason of certain features in our educational system to which I will now ask attention. The essential element in this system is the curtailing of the teaching by didactic lectures and the extension of that which depends for its perfection upon recitations from text-books, and demonstrations in the dissecting room, the laboratory, and at the bedside, of those facts, with which the student has acquired previously a theoretical familiarity from his text-book instruction. These recitations are conducted by a corps of instructors, juniors, to the chiefs, or professors of the several departments of anatomy, physiology, chemistry, pathology, materia medica and therapeutics, surgery, medicine, obstetrics and gynaecology, and they are so arranged that each of the subjects is covered entire. In order that the heads of departments may be kept in touch with the students throughout all this course of instruction, the professors give a limited number of lectures upon the more important matters, such, for instance, as are involved in the underlying principles of their respective subjects, and they also exercise a careful supervision over recitations pertaining to their departments, revising, elucidating, and extending them, so that while the text-book chosen for the student gives the basis of the subject in hand, the subject as a whole is presented by the instructor with the stamp of the head of the department upon it. By this means uniformity is maintained throughout the entire system, beginning with the recitations and ending in the laboratory, at the bedside, or in the autopsy room. This kind of instruction necessitates the division of the several classes into small sections, and this requires a large number of paid assistant teachers, but the results obtained justify the additional expense as will be shown by the more thorough training of our students, as compared with those who are still taught by methods we have thought wise to discontinue. It is needless to say that the plan of our instruction is broad enough to permit wide extension as opportunities come to us.

During the past year our efforts have been chiefly confined to developing the scheme of recitations, lectures, and clinical demonstrations. These are now on an assured basis, leaving for the next session the problems connected with laboratory demonstrations.

Owing to lack of adequate space this work has not been as complete as we wish or intend. This applies especially to the department of physiology, pathology, chemistry, and, in a less degree, to the department of materia medica. With the completion of the new building, however, this difficulty will be wholly obviated. Meanwhile by a better arrangement of hours for work, most of these defects of the past year will be obviated.

The department of pathology has been at a disadvantage owing to lack of a common head. This has been overcome by the appointment of Professor James Ewing to the chair. Under his direction the work will be amplified and so apportioned to the successive years as to afford every opportunity for the best results. In the department of physiology, laboratory work cannot be fully developed in our present quarters, this must of necessity wait upon the completion of the new building; the same utterance applies to physiological chemistry. In spite of these defects the subjects of chemistry, physiology, and pathology have been so ably and thoroughly presented in the lectures and recitations the students have suffered a smaller loss than might otherwise have occurred.

It remains for us to establish a department of hygiene suitable in every way to the demands of public health and in keeping with the ideals of the College. With the approval of the University this is now being done. An accomplished corps of instructors in all that relates to this matter has been selected, the course has been outlined and preparations completed to furnish thorough and systematic teaching in all that pertains to the subject both as presented to the practitioner in every day and general practice, and as it comes before him as an official or employé of Boards of Public Health and Quarantine.

The Faculty realizes fully that great success can only come from broad foundations, and slow and accurate growth. It is aiming to broaden the foundations as much as possible, trusting to the seasoning influence of experience and time, which is always coming, for direction. And under the inspiring influence of the Founder of the Medical Department, they intend that the plan and the course of instruction in each division of the School shall be so comprehensive that nothing will remain for the realization of a complete education in medicine but the elaboration of details of instruction, the proper co-ordination of subjects, economy of time, high ideals of duty, and its faithful performance.

I beg to submit the accompanying reports of Heads of Departments giving details of work done.

Respectfully submitted,

W. M. POLK,

Director of the Medical College.

APPENDIX XI

REPORT OF THE DIRECTOR OF THE NEW YORK STATE COLLEGE OF FORESTRY

To the President of the University:

SIR:—The State College of Forestry entered upon its first year of existence with a fair number of students taking advantage of this novel institution, considering that no effort had been made to advertise it.

During the first term thirty-one students took the three forestry courses of the junior year which were given; during the second term thirty-five registrations for the four forestry courses were recorded; and for the third term, fifteen registrations; although only five are registered as regular students of the College, the others coming from the Colleges of Engineering and Agriculture and the department of political economy.

A number of those from the College of Agriculture propose, after graduation from that College, to continue courses in the College of Forestry with a view of graduating.

In order to keep up the high standard, which it is proposed to maintain in this College, especially while the profession is still undeveloped in the country, it became necessary at the end of the second term to drop from the rolls one of the students of the College, who was not satisfactorily prepared.

The teaching force has consisted of only the Director and Assistant Professor Roth, the position of third instructor provided by law being left vacant partly because appropriations were insufficient and partly because in the absence of senior students the work could be performed without the additional assistance. For the coming year, both reasons having fallen, the Faculty has been completed by the appointment as second Assistant Professor of Forestry of Mr. John Gifford, D.Oec., who received his degree as Doctor of Economics from the University of Munich, Germany.

In addition to the regular course in timber physics in which ten students of engineering and one student of forestry received instruction during the first term, Assistant Professor Roth was called upon to give three lectures on wood as a material of construction to the large class of junior students of Sibley College in the course on materials of engineering, also one lecture on fire proofing of wood to the seminary in marine engineering and one lecture on the strength of wood and timber testing to a class in Sibley College; also one lecture to a botanical seminary on the practical questions with reference to fungus diseases of wood.

The literary facilities have been amply provided for by a library comprising not less than 500 volumes.

An outline course on the principles of law, with special reference to contracts and real estate, it is hoped, may be secured from the College of Law, while an attempt will be made with the co-operation of the department of zoology to provide at least portions of the desirable courses on fish culture and game preserving. These last two subjects will become an indispensable part of the education of foresters, not only because they are intimately connected in the policy of the State, but as private game preserves increase positions in which this knowledge combined with that of a forester is desired will become more frequent. Indeed the first call upon the College for a man was of this character.

The most urgent need is for a building, there being no room for the installation of demonstration material and collections provided, nor any but temporary accommodations in the way of laboratory and lecture rooms, Professor Roth depending in this on the courtesy of Sibley College; the Director, outside of an office room, using lecture rooms when not occupied by others, and shifting time of lectures accordingly, or, occasionally, even having to share a room with the botanical department, two classes meeting at the same time.

Ground for practicing in nursery work and forest planting was furnished by the superintendent of grounds, and opportunity for studying forestry conditions, forest measurement, and silvicultural methods in part have been found by excursions into neighboring woodlots.

The College forest of thirty thousand acres has been bought by the Forest Preserve Board for one hundred and sixty-five thousand dollars, but was not transferred to the College until April 1st. It is located near Tupper Lake Station on the Mohawk and Malone Division of the N. Y. C.

& H. R. R. R., containing about one half the acreage in virgin timber and the other half, for the most part, only slightly culled of spruce. A topographical survey of the property has been in progress during the summer, as well as a forest survey, in which surveys students of the Colleges of Forestry and of Civil Engineering have been employed.

Upon the basis of the forest survey the working plans for the management of the forest will be made, which, it is expected, will involve the logging of several million feet of logs and the cutting and marketing of a large amount of cord wood.

In addition to the cutting and reproducing of the forest by natural regeneration, an area of burned-over and cut-over lands requires planting in order to reclaim it for useful wood production. During the first weeks of occupancy, this work of reclaiming has been begun by planting about fifty acres with white pine and other conifers and also establishing a nursery for the purpose of growing the necessary plant material with about two hundred pounds of seed of various kinds, all conifers and mainly white pine, which it is proposed to restore to its former possession in the Adirondack forest wherever desirable. It is expected that in spite of the very unfavorable dry season, from two to three million seedlings will result, enough to plant more than the annual requirements of the College forest, the surplus to be sold at cost in order to encourage others to replant their waste lands.

During the month of August the unusually dry and hot season—a similar season has not been experienced for the last 12 years—gave rise to a number of destructive forest fires, lightning being in several cases the cause and carelessness of hunters and campers in others. Of the eight fires, which occurred in various parts of the property, most were confined to small extent (not over 2½ acres) only two assumed large proportions, namely, one running over nearly fifty acres, another over about 900 acres, in spite of strenuous efforts to confine them, at one time over 100 men being engaged in the fight. Both started in open places where winds and heat hastened their progress, one a clearing which had grown up to brush, the other an old burn in the neighborhood of a sphagnum bog, which in other years is wet. Fortunately the amount of damage is not expressed by the acreage, the larger portion of the 900 acres being represented by the aforesaid bog, although a considerable amount of young growth, which had established itself on the old burn, was lost and a small amount of old timber. The location of this latter along a newly-built public road from Saranac Inn to Wawbeek makes it desirable to replace the unsightly waste by planting the burnt area at once. No appreciable damage was done by the 50 acre fire. The cost of this service in fighting fires, amounting in all to over $1,000, will be audited by the Fisheries, Game, and Forest Commission, which is, under the law, charged with the duty of protecting forest property against fire. In this connection, I desire to express my gratification at the very efficient and ready manner in which the students, employed in the survey, assisted in fighting the fires.

These fires accentuate the necessity of making as rapidly as possible provisions for protecting and checking them, by patrols, by fire lines, and roads from which operations can be directed and by control of those who camp, fish, and hunt on the property.

In order to secure the most benefit from the College forest for purposes of instruction and to give opportunity for becoming acquainted with the practical work which a forester is expected to carry on, provisions have been made to transfer the junior and senior classes for the spring term entirely to the College forest, where the time will be spent mostly in practice work of various kinds. A farm of 200 acres with a boarding house, cottages, and all necessary farm buildings, a store, post office, and telephone communications forming part of the property, all centrally located at Axton, 13 miles from Tupper Lake, makes such an arrangement quite practicable.

The object of the forest is not only to serve as a demonstration and experiment in silvicultural methods and as a practice ground for the students, but to develop such methods of management as to make the forest self-supporting and, if possible, earn a revenue, as an example to other owners. The detail of the plans cannot be discussed at present and until at least the major portion has been surveyed and described and the stock on hand estimated.

It is proposed from time to time to publish bulletins of information as provided by the law establishing the College. One bulletin describing the aims and methods of the College has been printed in addition to the Announcement of the College.

The general policy and financial operations are directed and controlled by a Council or board of control created by the Board of Trustees.

The appropriations by the Legislature are made separately by the Legislature for the College and for the College forest and the accounts are kept separate, while all receipts from the sales from the College forest are turned over to the State Treasurer.

From this statement it will appear that Cornell University has no financial benefit from this institution ; on the contrary, it has an added responsibility in return for the prestige of administering the first professional College of Forestry in the United States.

The appropriations for the first year have been ten thousand dollars, which sum has again been appropriated for the present year for the College alone. For the inauguration of the work and improvements in the College forest a working capital of thirty thousand dollars has been granted.

Respectfully submitted,

B. E. FERNOW,

Director of the New York State College of Forestry.

APPENDIX XII

REPORT OF THE DEAN OF THE SUMMER SESSION

To the President of the University:

SIR:—I have the honor herewith to submit my report as Dean of the Summer Session for 1899.

I. ATTENDANCE.

The total enrollment of students for the Summer Session was four hundred and twenty-three, one hundred and eleven of whom were registered in the courses for nature work. The Registrar presents the following analysis of the attendance:

Number of Students		423
Cornell University Students		60
Former Cornell University Students		25
Graduates of College		130
Non-Graduates from other Colleges		76
Teachers		344
New York State		230
Outside New York State		193
A.B.	degrees	62
Ph.B.	"	11
B.S.	"	29
M.E.	"	5
B.L.	"	2
Pd.B.	"	5
Ph.M.	"	1
E.M.	"	1
LL.B.	"	11
A.M.	"	19
L.I.	"	1
M.B.	"	1
Pd.M.	"	6
Pd.D.	"	1
Ph.D.	"	4
M.S.	"	5
B.Lit.	"	1

The following table shows the subjects taught, together with the aggregate attendance in each; also the number of students in each course who took the examination:

Subject	Course	Hours	Attendance	No. taking examination
Greek	A	4	12	11
	B	4	6	5
	C	4	8—26	5—21
Latin	A	5	28	2
	B	5	22	3
	C	3	9—59	1—6
German	A	5	9	1
	B	5	7—16	5—6
French	A	5	18	12
	B	5	8—26	7—19
English	A	5	44	26
	B	4	30	22
	C	5	13—87	6—54
Psychology	A	3	25	19
	B	3	24	20
	C	2	21—70	13—52
Science and Art of Education	A	5	66	40
	B	3	40—106	22—62
History	A	5	16	11
	B	3	32	8
	C	2	24	12
	D	2	4—76	4—25
Political and Social Science	A	5	21	21
	B	5	14—35	14—35
Mathematics	A	5	23	12
	B	5	4	3
	D	5	11	7
	E	5	13	9
	F	5	3	-
	G	5	11	2
	H	5	16	12
	I	5	1	-
	J	3	1	-
	K	5	4	-
	L	5	2	-
	M	5	5	4
	N	5	2	2
	O	5	2—98	1—52
Physics	A	5	34	6
	B	5	11	7
	C	6	13	7
	D	6	11—69	3—23

Subject	Course	Hours	Attendance	No. taking examination
Chemistry	A	10	10	4
	B	3	2	1
	C	3—20 Lab.	9	5
	D	5	4	1
	E & F	3 & Lab.	8—33	5—16
Botany	A	6	15	13
	B	6	8	6
	C	8 Lab.	3	2
	D	6	15	7
	Grad.	-	1—42	—28
Physiology	A	3	12	9
	B	2	10—22	6—15
Geology & Phys. Geog.	A	5	20	17
	B	5	17	16
	C	3	7—44	7—40
Drawing & Art	A	15	13	7
	B	6	2	-
	C	2	6—21	2—9
Mechanical Drawing	A	5	10	8
	B	15 Lab.	7	6
	C	15 Lab.	3—20	2—16

Total Enrollment in Classes	850
Total Number Taking Examinations	479
Enrolled in Nature Study Courses	111

At my request Professor Bailey has made a brief report of the work in nature study, as follows:

II. NATURE STUDY

"More than one hundred pupils received instruction in the summer school in nature study. This number was about half of the number which actually applied for admission. We estimate that it is about one third or one fourth of the number which would have applied if it had not been stated two months previous to the opening of the course that the course already had been filled. There were two reasons for limiting the number in the course: First, the lack of room and facilities; second, the lack of experience in this work on the part of the teachers, who desired to begin with a comparatively small number. These students were all teachers, and the greater part of them were persons of considerable experience and of standing in their communities. Without exception, they were enthusiastic and teachable, and followed the work with great interest to the last. A number of them were teachers from outside the State.

"The instruction was divided into three parts: the study of insect life; the study of plant life; and the study of those general agricultural conditions which are of direct interest to teachers in their professional work. There are other subjects which are as useful in nature study work as these three, but it was thought best to begin with a comparatively small field this year and to enlarge the field in future years as circumstances seemed to demand.

"The animus of the instruction was to bring the students face to face with nature, to awaken a sympathy with their surroundings and with living things, and not to teach the sciences. The students were divided into four sections, and one whole day was given to one general subject. For example, on Mondays the whole lot was under the instruction of Professor Roberts; on Tuesdays and Thursdays, under the instruction of Professor Bailey; and on Wednesdays and Fridays, under the instruction of Professor Comstock. The general plan of the work was to open the day at nine o'clock with a lecture, then to occupy the forenoon with laboratory work on living subjects and to spend the afternoon in field excursions. This program was modified from time to time as circumstances demanded. In each of the three departments there were three or four assistants. Each section was under the direct supervision of one of the assistants, and the professors in charge supervised the work in person. A certificate, emanating from the College of Agriculture, was given to each student who completed the work.

"It is the opinion of those who were intimately concerned with this work that it was one of the most useful and successful ventures in summer-school teaching which the University has yet undertaken. Several very important questions arise in respect to the future of this work. One of these questions relates to the room and facilities, and another to the advisability of restricting the numbers. It is also a question for discussion as to how intimately the work should be correlated with that of other departments of the Summer Session."

III. USEFULNESS

There are not a few evidences that the Summer Session performs an important service, first to individuals, then to the cause of education, and finally to the University itself.

Persons engaged largely in the routine duties of the school receive a new impetus for their work when they come in contact with new educational forces, as they do at the University. While extending their scholarship somewhat, they attain new ideas, form new ideals, become imbued with new enthusiasms, and acquire fresh courage for the future. Nothing is more potent for good in education than courage, enthusiasm and alertness of mind in the teacher; for education is a sort of spiritual generation, the excellence of the offspring depending upon the mental energy of the parents. Summer work at the University, though it may appear to some as an added burden to an already overworked teacher, is in reality, when properly adjusted, a valuable recreation; for it is a change of work in a new environment, under new conditions of food, climate, society, and mental stimulus. To some extent, at least, the same is true for the University professors and instructors who devote a part of their vacation to teaching in the Summer Session.

In so far as the University is enabled to contribute to the good of education and to that of individuals, it necessarily contributes in obvious ways to its own future welfare.

IV. FUTURE ATTENDANCE

The experience of this, the first Summer Session of the University, indicates that the work can be conducted without serious financial sacrifice, while it is perhaps the almost unanimous conviction of its professors and instructors that the work is well worth doing. Both the nature of the case and the experience of other institutions indicate that, after the Summer Sessions become well known, their attendance depends upon the number and value of the courses offered. At the University of Chicago the attendance at the Summer Session now about equals the attendance in the department of Arts and Sciences during the remainder of the year —some sixteen hundred students. While perhaps but few city universities are so favorably situated for summer work as is Chicago, Cornell with her agreeable summer climate and unexcelled environment, together with her library, museums, laboratories, and other educational appliances would seem to possess every requisite for successful summer instruction. At the same time, the cost of board and tuition are so low that the teacher can work at Cornell cheaper than he can play at the summer resorts. In view of the foregoing, it would seem good policy not only to continue the Summer Sessions, but to enlarge year by year the number of courses offered.

It is not probable that all Universities of the future will hold Summer Sessions, since many are debarred by conditions that they cannot control; but it is reasonably certain that summer courses will be offered by those that are favorably situated and that stand in intimate relations to public schools. On the other hand it is equally evident that the educational needs of the great body of teachers and the golden opportunities for study offered by our long vacations, will impel them to attend in increasing numbers those institutions whose doors are open in summer.

Respectfully submitted,

CHARLES DEGARMO,

Dean of the Faculty of the Summer Session.

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It is not probable that all Universities of the future will hold Summer Sessions, since many are debarred by conditions that they cannot control; but it is reasonably certain that summer courses will be offered by those that are favorably situated and that stand in intimate relations to public schools. On the other hand it is equally evident that the educational needs of the great body of teachers and the golden opportunities for study offered by our long vacations, will impel them to attend in increasing numbers those institutions whose doors are open in summer.

Respectfully submitted,

CHARLES DEGARMO,

Dean of the Faculty of the Summer Session.

APPENDIX XIII

REPORT OF THE WARDEN OF SAGE COLLEGE

To the President of the University:

SIR :—I have the honor herewith to submit my second annual report as Warden of Sage College.

New circulars regarding Sage College and the Cottage have again been prepared this year, giving the same information as those of last year, but in the more convenient form of a pamphlet.

The number of students in residence at the beginning of the first term was, in Sage College, 133; in the Cottage, 30; at the beginning of the second term, in the College, 134; in the Cottage, 28; at the beginning of the third term, in the College, 128; in the Cottage, 27.

This shows a slight increase only over the numbers last year resident in University buildings. One thing is however to be remarked concerning the residents of this year. In the new Sage College circulars of 1899, appeared the following paragraph: "Students are free to reside elsewhere than in the University buildings, but it is earnestly recommended that undergraduate students should, for at least the first year of their University course, reside in Sage College or the Cottage, and thus enjoy the advantages of a social life at once independent and carefully guarded." It is of interest to note, as a result, in part, of this recommendation, the very large increase this year in the number of freshmen resident in the halls, 51, as against 25 in 1897-8.

ACADEMIC INTERESTS

Last year, with the concurrence of the Sage College Committee, it was decided to try the experiment of setting apart a wing of the building—the two corridors immediately above the botanical lecture room in the south wing—as rooms for graduate students and for other students only upon the recommendation of the Warden. The experiment has proved successful. The rooms have been occupied by graduate students and by students who, on account of delicate health or for other reasons, have desired a place in which to work free from even the normal amount of noise attendant upon dormitory life.

Not all the rooms in the wing were rented; but all of those on the south side were occupied and have been engaged for next year, while the rooms facing north and upon the court, as the least attractive in the building, are last to be rented under any conditions.

The experiment will be continued next year, and especial attention is now called, in the circulars, to this provision for the convenience of graduate students.

The interest and kindly feeling of the Alumnae last year has shown no sign of abatement, and although the Warden was unable to be present at their annual luncheon in New York, a report concerning Sage College was presented by the Acting President of the University. An alumnae luncheon is to be held this year for the first time in Sage College in Commencement week. It is earnestly to be hoped that this may serve as the beginning of alumnae reunions in Ithaca each year, through which the closest possible connection in interests and mutual helpfulness may be maintained between them and the actual student body. The Warden has this year had the opportunity of meeting alumnae and speaking to them concerning Sage College at the Rochester alumni banquet, at the annual meeting of the Association of Collegiate Alumnae in Philadelphia in October, and at a meeting of the Buffalo branch of that association in May. She has also addressed the pupils of the three High Schools of Buffalo.

A friend of the University has again subscribed in the name of Sage College to the American Women's Endowed Table at the Zoological Station in Naples.

SOCIAL LIFE

The social life of the students of Sage College centers in the drawing room and the gymnasium. In the latter the students dance for a half hour or so every evening after dinner, and on Friday nights have occasionally throughout the year given more elaborate entertainments—class dances, fraternity dances, graduate club entertainments and so on ; the students being, as hitherto, encouraged to do their entertaining whenever possible beneath the roof of Sage College itself rather than in the halls which may be hired for the purpose in town.

The Dramatic Club has this year given two plays, and two of the literary clubs have likewise entertained the entire body of women students ; more such activities however, leading as they do to a fuller social life among the women themselves are greatly to be desired, and it is to be hoped that the near future may see, for instance, the formation of a Glee Club here.

By invitation of the members of the Masque, this year women students will take part in the play to be given by the Masque in Commencement Week.

The Warden has this year given one hour each day to actual office work with the students. She is at home to them socially on every Monday afternoon from four until six ; and has entertained the women of the senior class more formally at a reception given to Miss M. Carey Thomas, and at a reception to themselves alone at the close of the University year. Her chief opportunity to entertain the students, however, has been in her private dining room, where she has been able to entertain visitors to the University, the guests of the College, the friends of the students, and to meet all the students themselves more intimately than would otherwise be possible.

This year as last year there has been music from time to time in the drawing room on Sunday evenings. A very beautiful gift has been made to the students through the kindness of a number of ladies living on the Campus and in town—an oil painting by Professor Olaf Brauner which has been hung on the wall of the drawing room and makes a very great addition to it.

In accordance with the recommendation in the report of last year, the dining room was during the summer redecorated, and a new floor was laid. The lighter scheme of color used has rendered it a far more cheerful and pleasing room. There is still need for the redecoration of the corridors, in particular the entrance corridor, along similar lines, in order that the first impression on entering the building may be one of greater homelikeness and attractiveness. The students' reading room is in need of like help. The students have this year received a gift of a set of thirty small volumes of short stories which have, since they were placed on the shelves, been in constant circulation. No small gift to the college would be more warmly appreciated by the students than an addition to their resources in this direction. Sets of Stevenson, Kipling, Henry James, etc., would be of the greatest service in times of recreation or of illness, and hardly anything would contribute more at once to the students' pleasure and advantage.

The greatest innovation in the social life of Sage College this year has been accomplished through an appropriation made by the Trustees in the autumn of 1898, in accordance with the recommendation in the report of last year, of a sum of money to be devoted to social entertainments to be given by the College as a whole to the University as a whole. Up to that time receptions had been given (at most two in a year) to the Trustees and Faculty and their families; but as the University increased, these had become a heavy matter financially for the students alone to carry. By means of the special appropriation this year, it was made possible to hold five such receptions, one to the Trustees and Faculty and their families only, the other four including as well any members of the general student body of the University. The number of guests at these receptions has varied from 250 to 400; the reception committee has been always the executive committee of Sage College with such help as they chose to ask among the other students. At two of the five receptions there has been music. The greatest gain from the point of view of the students in these entertainments is the opportunity they offer for meeting members of the Faculty and their families, and the contribution they make in this way to the solidarity of the University as a whole. It is recommended that the same appropriation be made for this purpose next year. The form of entertainment chosen might well be varied from year to year, but always with the one object in mind—the knitting together more and more closely the different members of the University body.

PHYSICAL WELFARE

The Infirmary this year to Sage College as to all other departments of the University has proved a genuine blessing. One ward is set apart for the women students, and in this place during the past year 16 women have received treatment, 11 of these being from Sage College. The cases have varied all the way from serious and dangerous illness, to the mere need of rest from the routine of heavy work. We have been especially fortunate as a College in escaping this year the serious epidemic of the *grippe*, which ravaged so many colleges and universities last winter. There were but four cases of it among the students in Sage.

Other cases of slight indisposition have been treated in the College itself, but with the Infirmary to depend upon, it has been found unnecessary to reserve in Sage a room especially as a sick room. What would very greatly benefit all the women students is a series of talks on personal hygiene by some woman physician of acknowledged standing. It is recommended that at least a short series of such lectures be given next year, and attendance required of all women students. It is hardly to be doubted that immediate beneficial results would ensue, in a more intelligent care of themselves by the students.

Athletic sports have flourished among the women this year. The Sports and Pastimes Association has been incorporated under the laws of the State of New York, and is now entitled to hold and acquire property in its own right. Tennis has been as much played as ever; and basket ball has taken a leap into popularity through the formation of separate class teams and the resulting interclass contests. The banner offered to the winning class by the instructor in physical training and the Warden was won by the juniors, after a series of close contests; and a match game has been played as well with the visiting women's team of Syracuse University. The same policy has been pursued this year as last, in discouraging the women of Cornell from playing games elsewhere.

Interest in rowing, too, has been greatly increased through the purchase by the students themselves of two rowing machines for practice, which have been placed in the instructor's office in the Sage gymnasium.

A large number of students have learned to swim (a requirement before boating may be enjoyed) and have practiced on the machines. During the spring a little rowing has been done on the Inlet. Meanwhile, in accordance with the suggestion made in the President's Report of last year, and through the faithful efforts of certain alumnæ and the generosity of friends of Sage College, the necessary sum of $1,000 has been collected for the erection of a women's boat house here. Although its site has not yet been determined, next year's report may, it is hoped, record the completion of the house.

GOVERNMENT

With regard to the matter of government, the policy outlined in the report of last year has this year also been followed.

The College has ceased to attempt itself to furnish chaperonage, except, when necessary, at the University Military Hops, or other strictly

University entertainments. The students therefore supply their own chaperones, subject always to the approval of the Warden

The board of proctors of last year has this year developed into a somewhat more responsible body of nine members, six appointed by the Warden, three elected by the students. This body is not only responsible for maintaining quiet after ten o'clock at night, but is consulted on any matters of government which concern the students generally, forms a reception committee at all entertainments given by the College, and serves in general as a channel of communication between the Warden and the students as a whole. It is through the development of the responsibilities and powers of this "executive committee" that a more completely systematized method of government is to be sought, where the committee shall serve as full representatives of the students, shall be elected by them solely, and shall work with the Warden in full co-operation in all matters concerning the welfare of the students as a whole.

In practice it proves difficult always, however indisputable may be the theory, to preserve suitable quiet throughout a large dormitory. It has, however, been made very clear to the students that if the claims of quiet and of noisy students cannot otherwise be reconciled, and a choice between them must be made, it is the noisy students who will be asked to leave the hall.

This is but a small illustration of the general policy of government in Sage College: to allow to all students all possible privileges, consistent with propriety; and then, should a certain student prove unworthy of the trust, to deprive her of the privileges; if necessary, even of the privilege of residence in the College halls. Through these means each individual student is trained most fully in habits of judgment and self-control, and comes to take part in the deepest sense in the self-government of the College.

The greatest need this year is the creation of a University position of head of Sage College Cottage. Although it is run on the same plan, and with sole responsibility resting upon the Warden of Sage College, there are a great number of details regarding the administration of the Cottage and the life of the students in it, which must be settled on the spot. The management of the Cottage has this year been provided for by the appointment of a special student to hold the immediate responsibility, especially at night, for the other students in the building. She has been remarkably successful in her work. But what is needed is some one who can give all her time to the needs and calls of the position; who can be of service in case of sudden or slight indisposition; who is free, as no student can be free, to bear the responsibility for the students in Sage Cottage as the representative of the Warden. It is earnestly recommended that such an appointment be made next year.

Respectfully submitted,

LOUISE SHEFFIELD BROWNELL,

Warden of Sage College.

APPENDIX XIV

REPORT OF THE REGISTRAR

To the President of the University:

SIR:—I have the honor to submit herewith my annual report as Registrar of the University. The work of the year has gone on steadily and satisfactorily, as follows:

THE ACADEMIC YEAR

	Days in Session.	Sundays.	Holidays.	Vacation.	Total.
Fall Term, Sept. 19–Dec. 22	81	13	1	--	95
Christmas Vacation, Dec. 23–Jan. 2	--	--	--	11	11
Winter Term, Jan. 3–March 24	68	11	2	--	81
Spring Vacation, March 25–April 3	--	--	--	10	10
Spring Term, April 4–June 22	68	11	1	--	80
Summer Vacation, June 23–June 27	--	--	--	5	5
Summer Term in Entomology, June 28–Sept. 6	60	9	1	--	70
Summer Session, July 5–Aug. 16	37	6	--	--	43
Summer Vacation, Aug. 17–Sept. 24	--	--	--	39	39

In addition to the above days in session, the library, the shops, and some of the laboratories were open the entire vacations except holidays and Sundays

The working year has been longer than usual because it began early in September and closed late in June. The next year will, however, be of usual length.

STUDENTS.

The total number who have received instruction this year including those in the Summer Session and in the Winter Course in Agriculture, but excluding duplicates, is 2,543. The following table covering the last eight years is given in order that a comparison may be made with former years. In this table figures for Short Winter Course in Agriculture and Summer Session are not given as satisfactory information for former years is not available.

The Courses in Arts, Philosophy, Science, Letters, and Medical Preparatory are now all under the jurisdiction of the Faculty of Arts and Sciences, and the total is given in the last two columns. Previous to 1897 optional and special students were separately tabulated. Now these are distributed among the Faculties to which they belong.

	1891-92	1892-93	1893-94	1894-95	1895-96	1896-97	1897-98	1896-99
Grad. Department	177	170	231	188	145	161	166	190
Arts	142	141	138	133	146	170	---	---
Philosophy	100	110	121	136	153	155	---	---
Science	82	89	89	115	144	159	---	---
Letters	94	82	85	65	50	27	---	---
Optional and Sp.	122	137	126	132	139	170	---	---
Medical Prep.	12	11	5	6	4	8	---	---
Academic Dept.	---	---	---	---	---	---	624	631
Law	122	176	197	191	207	239	246	164
Medicine	---	---	---	---	---	---	---	278
Agriculture	22	22	25	24	30	34	84	85
Veterinary	---	---	---	---	---	11	16	23
Forestry	---	---	---	---	---	---	---	7
Architecture	68	78	97	76	67	51	53	48
Civil Engineering	139	129	116	122	121	150	179	185
Mechanical Eng.	251	295	239	212	201	230	467	501
Electrical Eng.	250	260	232	289	295	243		
Total in Univ.	1538	1700	1801	1689	1702	1808	1835	2101

SUMMER SESSION, SUMMER TERM IN ENTOMOLOGY, AND WINTER COURSE IN AGRICULTURE.

During the summer of 1899, 423 students have been registered in the Summer Session and 29 students in the Summer Term in Entomology.

In the Summer School of 1893 there were 169; in 1894, 277; in 1895, 272; in 1896, 237, in 1897, 192; in 1898, 203.

In the summer term in entomology in 1897 there were 18, and in 1898 there were 20.

In the Short Winter Course in Agriculture in 1899 there were 89 students.

Of the 423 students in the Summer Session of 1899, 60 have been in the University during the present year, and 25 were ex-Cornell students or graduates of Cornell; 130 of the students in the Summer Session already hold degrees, and in addition 76 have attended other colleges and universities. Eighty-one per cent of the 423 are teachers, 230 students reside in New York State and 193 are non-residents of the State.

Some of the degrees and the number represented are A.B.'s, 62; Ph.B.'s, 11; B.S.'s, 29; LL.B.'s, 11; A.M.'s, 19; Ph.D.'s, 4; Pd.M.'s, 6; Pd.B.'s, 5, etc.

MATRICULATES

One thousand three hundred and twenty-five students have registered during the present year for the first time. Sixty-seven of them entered as specials, 154 on Regents' diplomas, 199 on school certificates, 22 by examinations, 8 by veterinary student certificates, 52 on medical student certificates, 54 as graduate students, 327 from other colleges and universities (about 190 of these entered the Medical College and might also be classified as entering on medical student certificates), 345 entered the Summer Session, 89 the Short Winter Course in Agriculture, and 8 the summer term in entomology.

ADMISSION FROM OTHER COLLEGES AND UNIVERSITIES

The credentials of students entering from other colleges and universities have been adjusted by the secretary of the Faculty concerned, except for entrance to the Academic Department. The Registrar has assumed the work in that Department, and when the elective system, begun in 1897, has become fully realized in 1901 it will greatly facilitate the passage from other institutions to Cornell by reducing to a minimum the specific subjects required here for the A.B. degree. Students who have been attracted to Cornell will now be able to make the change to the Academic Department and devote themselves to special fields unhampered by arrears of required work.

In the following lists should properly be included a number of cases of special students, who, coming from other colleges, would have been eligible for admission to advanced standing. Such students, however, preferred to be under the special direction of some one professor with whom they desired to study.

The number of students admitted to advanced standing as candidates for the first degree during the past thirteen years is, as nearly as may be ascertained, as follows :

Year	Arts	Phil.	Lett.	Sci.	Agr.	Arch.	Civil Eng.	Mech. Eng.	Law*	Vet.	No. of Cases
1886–87	2	8	1	4	1	4	6	18	--	--	50
1887–88	6	4	1	1	--	--	11	10	--	--	37
1888–89	5	--	6	5	2	2	12	21	--	--	64
1889–90	4	5	6	3	2	1	2	25	--	--	50
1890–91	8	8	2	4	1	--	14	28	--	--	69
1891–92	7	9	2	5	2	2	10	52	--	--	90
1892–93	6	6	1	8	--	6	11	44	--	--	87
1893–94	5	6	5	8	--	6	6	56	--	--	98
1894–95	4	2	3	3	2	3	6	44	--	--	71
1895–96	5	11	4	7	3	3	9	33	--	--	85
1896-97	10	4	2	4	3	3	11	42	12	5	100
1897–98	11	6	--	7	9	2	15	41	15	1	108
1898–99	27	6	1	7	4	3	16	56	6	2	134

Of the 134, 50 registered as freshmen, 31 as sophomores, 27 as juniors and 26 as seniors.

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* No data prior to 1896–97.

In addition to the above, 193 students entered the Medical College from attendance in other colleges and universities during 1898–99.

In 1888–89, one student was admitted to the course in chemistry and one to the course in pharmacy. Prior to 1897, four students were admitted to the medical preparatory course and 50 as optional students. These courses have been abolished. Entrance to other courses has been abolished, but students are still entering the upper classes of the courses.

The distribution of students admitted to advanced standing among the 237 institutions from which such applicants have come during the last 13 years is indicated in the following table. This table does not include about 193 students entering the Medical College from other colleges and universities.

Acadia	3
Adelbert	2
Alabama	2
Alabama Polytechnic Inst.	1
Alfred	3
Allegheny	7
Alma	1
Altoona (Germany)	1
Amherst	5
Armour Inst.	4
Arizona	1
Astrachansky (Russia)	1
Austin	1
Baldwin Univ.	1
Baltimore City	6
Bates	2
Baylor	1
Beaver	1
Beloit	3
Berlin Koenigl. Tech. Hoch. Sch.	2
Brigham Young	1
Brooklyn Polytechnic	21
Brown	8
Bryn Mawr	4
Buchtel	5
Bucknell	5
Buffalo Univ.	1
California	4
Canisius	1
Carleton	2
Case	20
Centenary	3
Central	1
Centre	1
Charleston	1
Chicago	7
Christian Brothers	1
Cincinnati	10
Clemson	1
Claflin Univ.	1
Coe	2
Colby	1
Colgate	3
Colorado Coll.	1
Colorado Sch. of Mines	1
Colorado State Agr.	1
Colorado Univ.	1
Columbia	16
Columbian	5
Dakota	1
Dalhousie (Canada)	3
Dartmouth	4
De la Salle Inst.	1
Denison	1
Denver	1
De Pauw	6
Deseret	1
De Veaux	2
Dickinson	6
Doshisha (Japan)	1
Duquesne	1
Earlham	2
Elmira	2
Emory	1
Franklin & Marshall	1
Freiburg	1
Furman	2
Gettysburg	1
Grove City	2
Georgetown (D. C.)	7
Georgetown (Ky.)	1
Georgia	5
Georgia Technology	3
Granville Female	1
Hamilton	6
Hampden Sidney	2
Hampton	1
Harvard	12
Harvard Annex	2
Haverford	2
Hillsdale	4
Hiram	2
Hobart	8

Holy Cross	2
Howard Univ.	2
Idaho	1
Illinois	14
Illinois State Normal	1
Illinois Wesleyan	2
Indiana	9
Iowa Agr.	13
Iowa Coll.	3
Iowa State Univ.	5
Jena (Germany)	1
Johns Hopkins	4
Kansas State	4
Kenyon	3
Kentucky State	1
Kentucky Wesleyan	1
Knox	9
Lafayette	6
Lake Forest	4
Lebanon Valley	1
Leesville	1
Lehigh	35
Liege (Belgium)	1
Lima (South America)	1
Louisiana State	3
Maine State	4
Manitoba	1
Marietta	1
Marquette	1
Maryland Agr.	1
Massachusetts Agr.	8
Massachusetts Inst. of Tech.	21
Macallister	1
McGill	5
Miami	5
Michigan	23
Michigan Agr.	13
Michigan Mining School	1
Miller Manual Training	1
Minnesota	9
Mississippi Agr.	1
Missouri School of Mines	1
Missouri State	6
Monmouth	1
Montana	1
Mount Allison (Canada)	2
Mount Holyoke	2
Mount Union	1
Nebraska	2
New Brunswick	1
New Hampshire	1
New Hampshire Agr.	1
New York City Normal	3
New York City Veterinary	3
New York, Coll. of the City of	40
New York Coll of Pharmacy	1
New York, University of	2
North Carolina	2
North Carolina Agr.	3
North Dakota University	2
Northwestern	6
Notre Dame	3
Oberlin	16
Ohio	1
Ohio State	23
Ohio Normal	3
Ohio Wesleyan	8
Oklahoma Agr.	1
Olivet	3
Ontario Veterinary	2
Oregon	1
Ottawa (Kansas)	1
Pacific University	1
Pennsylvania Military College	6
Pennsylvania State	16
Pennsylvania University	13
Pennsylvania Western Univ.	7
Pomona	1
Portland University	1
Princeton	8
Purdue	14
Queen's University	1
Racine	1
Radcliffe	1
Rensselaer Poly. Inst.	9
Reykjavik (Iceland)	1
Richmond	3
Ripon	1
Rochester	9
Rose Poly. Institute	10
Rutgers	4
St. John's (Baltimore)	2
St. John's (Fordham)	4
St. John's (New York City)	1
St. Louis (Costa Rica)	1
St. Lawrence Univ.	2
St. Petersburg (Russia)	1
Senmon Gakko (Tokio, Japan)	1
Simbirsk (Russia)	1
Smith	3
South Carolina	4
Stanford	12
Stevens Institute of Tech.	32
Swarthmore	19
Sydney Univ.	1
Syracuse	9
Tennessee	3
Texas	4
Texas Agricultural	3
Toronto	1
Trinity (Conn.)	1
Trinity (N. C.)	1
Truro Agr. (Canada)	1
Tufts	1
Tulane	8
Union	8

Union (Tokio, Japan)	1
U. S. Military Academy	5
U. S. Naval Academy	3
U. S. Grant Univ.	1
University of So. California	1
University of Washington	1
Upper Iowa	2
Utah	3
Vanderbilt	3
Vassar	2
Vermont Univ.	1
Victoria	1
Vincennes	1
Virginia Agr. and Mech.	1
Virginia Mil. Inst.	3
Virginia Poly. Inst.	4
Virginia Univ.	2
Wabash	1
Washington and Jefferson	3
Washington and Lee Univ.	2
Washington Coll.	3
Washington Univ.	13
Waynesburg	1
Wellesley	11
Wells	3
Wesleyan	7
Western Maryland	2
Western Normal	1
Western Reserve	1
West Virginia Univ.	1
Wheaton	2
Wilberforce Univ.	1
Wilmington	1
Williams	10
Wisconsin	15
Wittenburg	2
Wooster	18
Worcester Poly. Inst.	18
Yale	28

ADMISSION ON CERTIFICATE, REGENTS' DIPLOMAS, AND EXAMINATIONS

The Registrar is secretary of the University Faculty Committee on Admission by Certificate and also has charge of the credentials of those entering by Regents' diplomas and by examinations.

During the last eight years the numbers of applicants admitted by certificate, by Regents' diplomas, and by examinations, are as follows:

	1891–92	92–93	93–94	94–95*	95–96	96–97	97–98	98–99
Certificate	171	195	209	156	164	202	193	199
Regents	118	120	125	118	119	131	140	154
Examination	57	63	55	23	28	28	25	22
	346	378	389	297	311	361	358	375

The discrepancy in numbers in the freshman class, if compared with those given in the Register, is due to students being registered back and to students admitted from colleges and universities partly to advanced standing.

It should be noted that the number entering entirely by examination is becoming smaller and that the total is again approaching the large attendance during the years 1892–94. The preparatory schools are now better acquainted with our entrance requirements. The Regents' diploma now admits to the College of Law, and under certain conditions relieves all students from taking an entrance examination in English. 154 have offered Regents' diplomas, an increase of 14 over last year. The failure of several students to pass the entrance examinations before completing the high school course has influenced others to complete their course in school and enter the University by certificate.

UNSATISFACTORY WORK

The function of the Doubtful Case Committee of the former General

Faculty has been performed by a similar committee from each of the Faculties.

During the year 1898–99 the following action has been taken by the different Doubtful Case Committees at the close of the respective terms:

Date	Action	Arts	Law	Med.	Agr.	Vet.	For.	Arch.	C. E.	M. E. & E. E.
December	Dropped	5	5	1	1	0	0	0	8	12
	Warned	17	2	0	3	0	0	0	3	20
March	Dropped	0	0	1	4	0	1	1	9	11
	Warned	0	0	1	1	0	0	0	11	13
June	Dropped	2	1	1	0	0	0	0	11	11
	Warned	9	4	7	0	0	0	2	4	9

PETITIONS

The usual form of petition has been continued by the several Faculties. The Faculties of Agriculture, Civil Engineering, and Veterinary Medicine have filed the petitions in the offices of these Colleges and have notified the Registrar of the action taken; while the Arts and Sciences, Law, Medicine, and Mechanical Engineering Faculties have returned the petitions to this office and the office has notified the students by mail. The number of petitions acted upon during the last three years by the various Faculties is as follows:

	Grad.	Arts	Law	Med.	Agr.	Vet.	For.	Arch.	C. E.	M.E. & E.E.
1896–97	11	1035	130	--	121	1	--	61	302	990
1897–98	10	902	244	--	163	2	--	66	257	865
1898–99	9	927	128	24	213	8	3	19	267	802

LATE REGISTRATION

Permits to register after registration day have been granted by the Deans of the Faculties concerned as below. The late registration in January, 1897, was exceptionally large owing to the fact that registration day was on Monday. In the fall term graduate students are allowed until Oct. 15th to register.

	Term	Grad.	Arts	Law	Med.	Agr.	Vet.	For.	Arch.	C. E.	M. E. & E. E.	Total
1896–97	Fall	0	20	17	--	2	0	--	1	4	12	56
	Winter	20	118	49	--	4	1	--	6	20	68	286
	Spring	7	33	25	--	5	0	--	2	5	41	118
1897-98	Fall	0	18	8	--	2	0	--	4	4	11	47
	Winter	12	60	42	--	1	0	--	2	18	36	171
	Spring	8	43	14	--	3	0	--	3	6	40	117
1898–99	Fall	0	19	11	0	1	0	0	1	11	10	53
	Winter	12	70	22	1	6	0	0	4	12	54	181
	Spring	14	51	23	0	4	0	1	9	18	56	176

TABLE SHOWING BY YEARS THE NUMBER AND KINDS OF DEGREES GRANTED BY CORNELL UNIVERSITY

FIRST DEGREES

	1869	1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	Total
Bachelors of Arts	8	8	7	4	17	4	8	8	5	9	7	12	18	13	10	8	6	7	8	14	11	20	23	35	39	26	29	31	39	42	50	526
Bachelors of Literature	----	----	----	----	3	4	----	1	2	3	7	5	5	8	8	----	5	1	----	----	----	----	----	----	----	----	----	----	----	----	----	52
Bachelors of Philosophy*	----	7	9	9	6	3	5	3	8	2	----	4	4	5	7	9	7	13	17	15	18	13	17	26	26	24	25	43	49	44	26	444
Bachelors of Letters	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	17	27	19	39	31	32	30	13	20	12	16	3	5	264
Bachelors of Science†	----	8	17	38	45	30	19	25	25	24	33	40	35	29	21	31	26	36	8	8	13	17	14	23	26	21	23	23	34	57	59	808
Bachelors of Sci. in Chemistry	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	2	1	2	3	----	----	----	----	----	----	----	----	9
Bachelors of Sci. in Nat. Hist.	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	----	1	2	----	----	----	----	----	----	----	----	4
Bachelors of Sci. in Agriculture	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	----	7	6	7	11	8	3	4	4	5	----	----	----	56
Bachelors of Sci. in Architecture	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	6	4	11	6	19	8	6	8	13	18	19	----	----	----	118
Bachelors of Architecture	----	----	----	----	1	6	4	6	7	2	4	3	----	1	2	1	2	----	----	----	----	----	----	----	----	----	----	----	8	9	8	64
Bachelors of Agriculture	----	----	----	----	2	2	1	1	2	1	----	3	8	4	2	2	2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	30
Bachelors of the Sci. of Agr.	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	8	9	12	29
Bachelors of Veterinary Science	----	----	1	1	----	----	----	----	----	----	1	----	----	----	----	----	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	4
Doctors of Veterinary Medicine	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	3	4	6	13
Graduate in Pharmacy	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	----	----	----	----	----	----	----	----	----	----	1
Pharmaceutical Chemists	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	2	----	----	----	----	----	----	----	----	----	2
Bachelors of Civil Engineering	----	----	7	16	18	15	8	12	15	14	10	7	9	4	10	7	9	----	----	----	----	----	----	----	----	----	----	----	----	----	----	161
Civil Engineers	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	10	18	21	15	36	24	30	25	25	30	23	24	15	30	326
Bachelors of Mech. Engineering	----	----	----	----	3	1	5	6	7	12	5	4	3	----	5	3	3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	57
Mechanical Engineers‡	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	8	19	22	32	54	52	85	93	81	87	110	125	87	89	944
Bachelors of Laws	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	9	36	32	44	37	62	65	76	61	81	105	25	633
Doctors of Medicine	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	67	67
Total First Degrees	8	23	41	68	95	65	50	62	71	67	67	78	82	64	65	61	61	82	92	137	158	242	229	282	312	272	312	327	387	375	377	4612
***Ph.B. in Hist. and Political Sci.**	----	----	----	----	----	----	----	----	----	----	----	----	----	----	2	6	3	4	----	3	2	1	4	5	1	3	1	3	2	----	2	42
†B.S. in Chemistry	----	----	----	----	4	1	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	6
in Chem. and Physics	----	----	----	----	----	----	----	4	----	3	----	3	----	----	1	1	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	13
in Natural History	----	----	----	----	1	2	2	1	3	2	1	4	2	4	1	1	3	4	----	----	----	----	----	----	----	----	----	----	----	----	----	31
in Science and Letters	----	----	----	----	----	----	----	----	1	18	31	31	29	22	18	27	18	28	----	----	----	----	----	----	----	----	----	----	----	----	----	223
in (Physical) Science	----	----	----	----	----	----	----	----	----	1	----	----	3	1	1	2	----	1	----	----	----	----	----	----	----	----	----	----	----	----	----	9
in Mathematics	----	----	----	----	----	----	----	----	----	----	1	1	1	1	----	----	----	1	----	----	----	----	----	----	----	----	----	----	----	----	----	5
in Civil Engineering	----	----	----	----	----	----	----	----	----	----	----	1	----	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	2
in Electrical Engineer'g	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	4	2	----	----	----	----	----	----	----	----	----	----	----	----	----	6
‡M.E. in Electrical Engineer'g	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	3	7	8	19	28	28	44	46	43	51	69	69	46	33	394

TABLE SHOWING BY YEARS THE NUMBER AND KINDS OF DEGREES GRANTED BY CORNELL UNIVERSITY

ADVANCED DEGREES

	1869	1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	Total
Architect	----	----	----	----	----	----	----	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1
Civil Engineers	----	1	----	----	1	4	----	2	2	2	2	1	2	----	2	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	20
Mechanical Engineer	----	----	----	----	----	----	----	----	----	----	----	----	----	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1
Masters of Arts	----	----	----	----	1	----	----	4	2	1	----	----	----	1	2	2	2	3	1	3	1	8	6	6	4	8	2	1	10	10	16	94
Masters of Philosophy	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	----	2	----	3	1	3	----	----	----	10
Masters of Letters	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	3	2	3	----	----	----	----	9
Masters of Science	----	----	----	1	----	3	3	2	3	----	1	2	1	1	2	1	5	3	3	3	6	7	5	5	4	9	5	8	----	1	----	84
Masters of Sci. in Agriculture	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	2	2	----	1	3	5	5	3	22
Masters of Sci in Architecture	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	----	----	1	1	1	1	----	----	5
Masters of Civil Engineering	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	----	1	----	1	2	----	2	8	4	----	1	3	2	25
Masters of Mechanical Eng.	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	----	2	1	6	3	6	14	16	8	15	6	2	7	87
Masters of Laws	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	7	5	3	11	10	8	4	7	5	----	60
Doctor of Veterinary Medicine	----	----	----	----	----	----	----	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1
Doctors of Science	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	2	----	----	----	----	----	----	2	3	6	3	3	----	----	19
Doctors of Philosophy	----	----	----	1	1	1	----	----	1	----	1	1	----	----	----	----	3	1	----	3	1	2	3	8	4	16	13	14	11	23	7	115
Doctors of Laws (Honorary)	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	2	----	----	----	----	----	----	----	----	----	----	----	----	----	2
Total Advanced Degrees	----	1	----	2	3	8	3	10	8	3	4	4	3	3	6	4	10	13	4	12	9	32	26	33	46	76	52	52	44	49	35	555
Grand Total	8	24	41	70	98	73	53	72	79	70	71	82	85	67	71	65	71	95	96	149	167	274	255	315	358	348	364	379	431	424	412	5167

The above tables give the number admitted to graduation at the 1899 Commencement as well as those of former years. The discrepancy between this table and the one given in the 1896–97 report is due to a careful investigation while compiling data for the third Ten Year Book. Several degrees had been conferred and not recorded. Care has been taken to discriminate between closely allied degrees, but such have been grouped so as to show at a glance the number in each department.

Respectfully submitted,

DAVID F. HOY,

Registrar.

APPENDIX XV

REPORT OF THE LIBRARIAN

To the President of the University:

SIR :—I have the honor to submit herewith the annual report on the University Library for the year 1898–99.

The following table shows the additions made, during the year ending July 31st, 1899, to the several collections included in the University Library, and also the total present extent of the Library :

	ADDITIONS, 1898–99		PRESENT EXTENT	
	Volumes	Pamphlets	Volumes	Pamphlets
General Library	12,456	1,600	196,260	36,600
Law Library	1,058	----------	27,562	----------
Flower Veterinary Library	230	----------	1,200	----------
Totals	13,744	1,600	225,022	36,600

The Flower Veterinary Library, the gift of the late ex-Governor Flower to Cornell University, for the use of the State Veterinary College, as heretofore is included in the collections composing the University Library. It is deposited in the State Veterinary College, and supplements the working library of the College, purchased from State funds and not included in the University Library statistics.

In 1898 there was established a department in the University, to be known as the New York State College of Forestry, maintained by State funds. For this department of the University, during the past year, 415 volumes have been purchased from the funds of the College, and these volumes are included in the estimate of the general library given above.

Of the accessions to the general library, numbering this year 12,456 volumes, 3,300 volumes were received as gifts, and 461 volumes were additions to various seminary libraries. The seminary libraries now contain in all 3,340 volumes, and as heretofore are included in the estimate of the general library.

The more important gifts of the year include 866 volumes added to the White Historical Library as the gift of ex-President A. D. White; 318 volumes presented by Professor J. M. Hart, comprising a valuable collection of first editions of Byron's works, and numerous works in Celtic literature and civil law; 130 volumes, including a very full collection of Dreyfus literature, presented by Theodore Stanton, '76; 81 volumes added to the Dante collection by Willard Fiske; a set of Wyclif's Latin works, the gift of the Wyclif Society; 100 volumes on Catholicism, presented by the Cornell Catholic Union; and a set of the privately printed works of the late W. J. Linton, from the Appledore Press, the gift of his daughter, Mrs. M. Linton Mather. From the National and State Governments the usual supply of public documents has been received, and the British and Canadian Patent Offices continue to present to the library their valuable publications. To the Toronto Public Library we are indebted for 60 volumes of the Canadian Sessional Papers, nearly completing the library set. For the gifts here mentioned and for all the numerous minor gifts received, due acknowledgment has been made to the respective donors.

The purchases of the year from the income of the Sage endowment fund include many costly and important works, such as Bulliard's Herbier de la France, the Botanical Register, Braithwaite's British Moss Flora, the Annales ordinis S. Benedicti, the works of Aquinas, the Cabinet des Fées, Nicéron's Memoires, the Grande Encyclopédie, facsimiles of the Codex Bezae Cantabrigiensis, and of the Paris MS. of Demosthenes, the publications of the Edinburgh Mathematical Society, the Huguenot Society of London, the Royal Institution, the Royal Society of Literture, and the Verein für Socialpolitik; also sets of the Bulletin des Lois, of France, from 1789 to date, the Giornale di Matematiche, the Deutsche Reichstags Akten, Mineralogical Magazine, Philologischer Anzeiger, Revue de l'Histoire des Religions, Scottish Geographical Magazine, Zeitschrift für Mathematischen Unterricht, Zeitschrift für Vergleichende Rechtswissenschaft, Zoologische Jahrbücher. Among the important sets which have been completed during the year by the purchase of back volumes are the Bulletin de la Société Industrielle de Mulhouse, Centralblatt für Bakteriologie, Bulletino della Societa Entomologica Italiana, Collection Lampue, Deutsche Revue, the Entomologist, Journal de Mathématiques, Mittheilungen aus dem Gebiete des Seewesens, and Scientific American Supplement.

Dr. A. C. White, assistant librarian in charge of the classification, and Miss M. Fowler, in charge of the catalogue, report that the additions of the year have been classified and catalogued with promptness and regularity. Considerable progress has been made in the revision of the classification index. In addition to the regular accessions to the general library, the books of the Flower Veterinary Library have been catalogued and incorporated in the general card catalogue, and a duplicate set of these cards was made for the use of the Veterinary College. The work on the Dante catalogue has been carried forward most diligently by Mr. Koch, and the printing of part II has advanced to the letter M. It is expected that the whole of the catalogue will be in print by October, making two volumes of about 300 pages each.

From the White Historical Library, Professor Burr, the librarian, makes the following report: save the usual routine of book-ordering and shelving, and of work on the catalogue, there is little to report from the President White Library. The most important fact in its history during the past year has been the receipt by the Library from the income of the Warfare of Science with which the generosity of ex-President White has so generously endowed it, of more than fourteen hundred dollars ($1,448.50), almost the sum that came from this source last year. Nearly the whole of it has now been expended on the purchase of books, the fields which have most largely profited being the general history of civilization, the history of the French Revolution, and the local history of France—all topics in which Mr. White himself has long taken deep interest, and our growing facilities for whose study cannot but give him pleasure.

From the report of Mr. W. H. Austen, assistant librarian in charge of the reference library, covering the recorded use of the library, the number of volumes deposited in the various departments, and the results of the annual inventory, the following statistics are taken: during the year the library has been open 308 days, and until eleven p. m. on 168 evenings. The recorded use made of the various collections during the year is shown in the following table:

REFERENCE LIBRARY AND READING ROOM	
No. of volumes permanently added to the collection	171
No. of periodicals added in the periodical room	56
No. of volumes placed on the shelves for special work	102
No. of volumes given out at delivery desk for reading room use	90,363
SEMINARY COLLECTIONS	
No. of volumes deposited in the several rooms	195
No. of volumes deposited for special work	2,820
DEPARTMENT COLLECTIONS	
No. of volumes placed on deposit in the several collections	471
CIRCULATION	
No. of volumes drawn by officers and graduate students	14,692
No. of volumes drawn by undergraduates	3,500
No. of volumes lent to other libraries	67
Total recorded use	112,423

Compared with previous years, since the removal of the Library to the new building, the recorded use of the books shows a constant and gratifying increase, the total numbers for 1892–93, the first complete year in the new building, having been 47,686, for 1896-97, 90,993, for 1897–98, 103,560, and for the past year 112,423. The statistics also show that the increase is almost wholly in the use of books in the building, the number of volumes given out for reading room use during the past year being 90,363, as compared with 82,561 in 1897–98. Of the constant use made of the books on the open shelves in the reference library, and of the seminary collections, no record is possible. The total number of volumes from the general library deposited in the various seminary rooms in the building is 5,091. The number of volumes from the general library similarly deposited in department and laboratory collections, in other University buildings, is 9,830. The number of cards of admission to the stacks issued during the year was 108, distributed as follows: in history and political science 31, literature and philology 16, philosophy and education 6, science and technology 55. In making the annual examination of the shelves in the stacks, 922 volumes were found out of place as against 2,450 the year before. Of the 420 volumes unaccounted for in the stacks at the date of the last report, 168 volumes have come to light during the year, and 92 volumes were reported as missing during the year, making a total of 344 volumes which cannot be accounted for at the present time. Of the 9,830 volumes deposited in the departments, 152 volumes are reported as missing at the date of this report. From the open shelves of the reference library 13 volumes have disappeared during the year and are still unaccounted for. Many of these volumes reported missing will doubtless be accounted for later, but in the meantime they are inaccessible for consultation and use. A daily record kept of all books called for and not supplied, because withdrawn from the library for home use, shows that 4,655 works were thus called for and could not be supplied, the numbers during term time averaging about 450 volumes a month.

During the year the Library Council undertook a revision of the general rules of the Library, and, upon the recommendation of the University Faculty, stricter regulations for the care and keeping of the University theses were framed. The Council, after careful consideration, also adopted certain regulations concerning the circulation of books, which, while making ample provision for supplying all reasonable demands of officers of the University for books needed for purposes of instruction or research, will, it is hoped, tend to increase the usefulness of the library as a reference library, and give greater satisfaction to the members of the University generally. The revised rules were submitted to the Trustees of the University, and received their approval in May of this year.

In the course of the current Summer Session some dissatisfaction has been expressed because the Library has not been kept open until eleven o'clock in the evening, as in the regular term time. No provision having been made for the additional expense necessarily involved in keeping the Library open longer than the usual vacation hours, from 9 A. M. till

5 P. M., it was impossible to comply with the desire on the part of members of the Summer Session to have the Library open in the evening this summer. If, however, the Summer Session is to be a permanent feature of the University, it may seem desirable that provision be made next year for keeping the Library open in the evening during this session.

I beg to repeat the recommendation, made in the last report, that a thorough inspection be made of the present provision for supplying fresh air to the reading rooms, and that, if possible, something may be done to secure better ventilation, especially in the periodical room.

The annual record of publications by the University and its officers has been prepared under the supervision of the Librarian, as a supplement to the Annual Report of the President. During the winter and spring terms, I gave, as announced in the Register, the usual course of lectures on bibliography.

Respectfully submitted,

GEO. WM. HARRIS,

Librarian.

APPENDIX XVI

PUBLICATIONS

By the University

Cornell University: addresses at the opening of the Medical College, by J. G. Schurman and W. M. Polk. [Ithaca, N. Y.], 1898. 8°. pp. 22.

Cornell studies in classical philology; edited by B. I. Wheeler, C. E. Bennett, and G. P. Bristol. ix.-x. [New York], 1898-99. 2v. 8°.

ix. Critique of some recent subjunctive theories, by C. E. Bennett.
x. The Athenian archons, by W. S. Ferguson.

The journal of physical chemistry; edited by W. D. Bancroft and J. E. Trevor. Vol. ii., no. 7—iii., no. 6. Oct., 1898-June, 1899. Ithaca, N. Y., 1898-99. 9 nos. 8°.

The philosophical review; edited by J. G. Schurman and J. E. Creighton, with the coöperation of J. Seth. Vol. vii., no. 4—viii., no. 3. July, 1898-May, 1899. New York, 1898-99. 6 nos. 8°.

The physical review; a journal of experimental and theoretical physics; conducted by E. L. Nichols, E. Merritt, and F. Bedell. Vol. vii.-viii. July, 1898-June, 1899. New York, 1898-99. 2v. 8°.

Transactions of the Association of Civil Engineers, Cornell University. Vol. vi. 1897-98. Ithaca, N. Y., 1898. 8°.

Proceedings of the Electrical Society of Cornell University. Vol. vi. 1898–99. Ithaca, N. Y., 1899. 8°.

Issued also as a supplement to the Sibley Jour., June, 1899.

11th annual report of the Agricultural Experiment Station. 1898. Ithaca, N. Y., 1898. 8°. *Illus.*

Bulletin of the Agricultural Experiment Station. No. 150–170. July, 1898–May, 1899. Ithaca, N. Y., 1898–99. 21 nos. 8°. *Illus.*

Cornell nature study bulletin. No. 1. June, 1899. 1 no. 8°. *Figs.*

Teacher's leaflets on nature study. No. 12–14, Jan.–June, 1899. Ithaca, N. Y., 1899. 3 nos. 8°. *Figs.*

No. 14 in Cornell Nature Study Bulletin, no. 1.

Junior Naturalist Club supplement to Teacher's leaflets. April–May, 1899. Ithaca, N. Y., 1899. 2 nos. 8°. *Figs.*

New York State Weather Bureau: report. Vol. x., no. 3, July, 1898–March, 1899. *m.* Ithaca, N. Y., 1898–99. 9 nos. 4°.

Issued in co-operation with the U. S. Department of Agriculture, Weather Bureau. Central office at Cornell University.

New York State Weather Bureau: weather-crop bulletin, in coöperation with the U. S. Department of Agriculture, Weather Bureau. Vol. x., no. 12—xi., no. 3, 4 July, 1898–8 May, 1899. *w.* [Ithaca, N. Y.], 1898–99. 16 broadsides.

By Officers

In the present list are included the titles of books, pamphlets, and signed contributions to periodicals, transactions, etc., published by officers and fellows of the University during the period extending from July 1, 1898, to June 30, 1899.

Anderson, L. *See* **Wing, H. H.,** *and* **L. Anderson.** Studies in milk secretion.

Atkinson, G. F. Elementary botany. New York, 1898. 8°. pp. xxiii.+244. *Illus.*

—— *Same.* 2d ed., revised. New York, 1899.

—— How to use Atkinson's Elementary botany in short courses. (New Jersey Science Teacher, 1899.)

—— Method of teaching botany in the secondary schools. (Asa Gray Bulletin, 1898, vol. vi., no. 6, p. 102.)

—— Studies and illustrations of mushrooms. II. (Cornell University Agricultural Experiment Station. Bulletin, May, 1899, no. 168, p. 491.)

—— *and Miss* **B. Stoneman.** A provisional key to the genera of the hymenomycetes (mushrooms, toadstools, etc.). Ithaca, N. Y., 1898. 8°. pp. 14.

Atkinson, G. F., *editor.* Botanical Society of America. Publications. 10, 11. [Ithaca, N. Y., 1899.] 2 nos. 8°.

Austen, W. Bookworms in fact and fancy. (Popular Science Monthly, June, 1899, vol. lv., p. 240.)

Card catalogues—suggestions for making them usable. (Library Jour., Dec., 1898, vol. xxiii., p. 655.)

Dependence of reference departments on cataloging and classification departments. (Papers and proceedings of the Amer. Library Assoc., 1898, vol. xx., p. 108.)

—— Our city library; a plea for its extension and betterment. (Ithaca Jour., 3 Jan., 1899.)

Bacon, G. A manual of otology, with an introductory chapter by C. J. Blake. New York, 1898. 8°. pp. 398. 110 *figs.* and *colored plate.*

—— Report of a case of mastoid disease affecting both sides and presenting symptoms of an intra-cranial complication. Operation. Recovery. (Transactions of the Amer. Otological Soc., 1898, vol. vii., p. 16.)

Bailey, L. H. The principles of agriculture; a text-book. New York, 1898. 16°. pp. xv.+300. *Figs.* (Rural science series.)

—— Sketch of the evolution of our native fruits. New York, 1898. sm. 8°. pp. xiii+472. *Port., plate,* and *figs.*

—— Evolution, nature, and religion. (Independent, 2 Feb., 1899, vol. li., p. 335.)

—— The evolution of a strawberry. (*Same*, 26 Jan., 1899, vol. li., p. 256.)

—— Hints on rural school grounds. (Cornell University Agricultural Experiment Station. Bulletin, Jan., 1899, no. 160, p. 275.)

—— Impressions of our fruit-growing industries. (Cornell University Agricultural Experiment Station. Bulletin, Oct., 1898, no. 153, p. 113.)

—— A New England country road. (Outlook, 3 June, 1899, vol. lxii., p. 275.)

—— *See also* Lauman, G. N., *and* L. H. Bailey. Annual flowers.

Bancroft, W. D. Dissociation studies. I. (Jour. of Physical Chemistry, Feb., 1899, vol. iii., p. 72.)

—— The equilibria of stereoisomers. III. (*Same*, March, 1899, vol. iii., p. 144.)

—— Note on the transference number of hydrogen. (*Same*, Nov., 1898, vol. ii., page 496.)

—— Pressure-temperature diagrams for binary systems. (*Same*, Jan., 1899, vol., iii., p. 1.)

—— Ternary mixtures. IV. (*Same*, April, 1899, vol. iii., p. 217.)

—— The variance of the voltaic cell. (*Same*, Oct., 1898, vol. ii., p. 427.)

—— *editor.* The journal of physical chemistry, Oct., 1898–June, 1899.

—— Articles published by students in the Jour. of Physical Chemistry:

Vol. ii. Benzaldoxime, by F. K. Cameron, p. 409; Potassium chlorid and aqueous acetone, by J. F. Snell, p. 457; Alcohol, water, and potassium nitrate, by N. Dodge and L. C. Graton, p. 498; The conversion of am monium thiocyanate into thiourea and of thiourea into ammonium thiocyanate, by J. Waddell, p. 525; Electromotive force between amalgams, by H. P. Cady, p. 551;

Vol. iii. Boiling point curves, by E. F. Thayer, p. 36; Reversible reactions, by J. Waddell, p. 41; Solid solutions, by H. P. Cady, p. 127; Freezing-points of ternary mixtures, by J. Waddell, p. 160; The composition of mixed vapors, I. by H. R. Carveth, p. 193; Minimum boiling-points, by J. H. Pettitt, p. 349.

Barr, J. H. Design of hoisting drums for uniform torque. (Sibley Jour., June, 1899, vol. xiii., p. 346.)

—— Suggestions on the design of Corliss valve gears. (*Same*, Oct., 1898, vol. xiii., p. 1.)

—— Two rational rules of thumb. (Amer. Machinist, 5 Jan., 1899.)

Bedell, F. Method of using a wattmeter, a voltmeter and an ammeter. (Sibley Jour., Oct., 1898, vol. xiii., p. 27.)

—— Transformer regulation. (Electrical World, 8 Oct., 1898, vol. xxxii., p. 364.)

—— [Review of] Alternate currents in practice; translated from the French of Loppé and Bouquet, by F. T. Moffett. (Physical Review, Jan., 1899, vol. viii., p. 64.)

—— [Review of] Magnetic fields of force, Part I.; by H. Ebert; translated by C. V. Burton. (*Same*, Sept., 1898, vol. vii., p. 192.)

Bedell, F., *and* **G. S. Moler.** Thawing frozen house mains [letter to the editor.] (Electrical World, 18 March, 1899, vol. xxxii., p. 347.)

Bedell, F., *and others.* The most efficient thickness of transformer plate; by F. Bedell, R. M. Klein, and T. P. Thompson. (Physical Review, Nov., 1898, vol. vii., p. 242.)

Read at the Boston meeting of the Amer. Assoc. for the Advancement of Science, Aug., 1898. Abstract in L'Elettricità, 29 Jan., 1899, vol. xviii., p. 60.

Bedell, F., *editor.* The physical review. July, 1898–June, 1899.

Bennett, C. E. Critique of some recent subjunctive theories. New York, 1898. 8°. pp. (5)+76. (Cornell studies in classical philology. 9.)

—— The quantitive reading of Latin poetry. Boston, 1899. 16°. pp. iii.+46.

—— On the reading of Latin verse [discussion at Michigan Schoolmasters' Conference, Ann Arbor, Mich., 1899.] (School Review, June, 1899, vol. vii., p. 325.]

—— What was *Ictus* in Latin prosody? (Amer. Jour. of Philology, Dec., 1898, vol. xix., p. 361.)

—— *editor.* Selections illustrative of the history of Latin poetry in the republican and Augustan periods. Ithaca, N. Y., 1899. 8°.

—— *editor.* Tacitus, Dialogus de oratoribus, with introduction and notes by A. Gudeman. Boston, 1898. sm. 8°. pp. xxxiii.+168. (College series of Latin classics, under the editorship of C. E. Bennett and J. C. Rolfe.)

—— *editor.* Cornell studies in classical philology. Nos. viii.–x.

Bentley, J. M. Current discussions of pyschology and education. (Philosophical Review, Jan., 1899, vol. viii., p. 104.)

—— [Review of] The development of the child; by N. Oppenheim. (*Same*, Nov., 1898, vol. viii., p. 668.)

—— [Review of] Mental imagery; by W. Lacy. (*Same*, Nov., 1898, vol. vii., p. 670.)

Bull, C. S. Shot and bullet wounds of the eye. (Transactions of the Amer. Ophthalmological Soc., 1898, vol. viii., pt. 2.)

Also in New York Medical Jour. 24 Sept., 1898.

—— Some points in the symptomatology and treatment of diseases of the sinuses adjacent to the orbit. (Jour. of the Amer. Medical Assoc. for 1899.)

—— Some unusual tumors of the orbit and vicinity. (Transactions of the Amer. Opthalmological Soc., 1898, vol. viii., pt. 2.)

—— Syphilitic diseases of the eye and its appendages. (New York Medical News, 20 May, 1899.)

—— Tumors of the orbit. (*Same*, 3 Sept., 1898.)

Burr, G. L. The search for the Venezuela-Guiana boundary. (Amer. Historical Review, April, 1899, vol. iv., p. 470.)

Buxton, B. H. Photographs of a series of sections of an early human embryo. (Jour. of Anatomy and Physiology, April, 1899, vol. xxxii., p. 381.)

Camac, C. N. B. Broadbents sign. (Bulletin of the Johns Hopkins Hospital, Nov., 1898, vol. ix., p. 171.)

—— A case of annular scotoma. (Medical Record, 8 Oct., 1898, vol. liv., p. 529.)

—— A case of peliosis rheumatica, with pallor, but unusually high blood count. (*Same*, 24 Dec., 1898, vol. liv., p. 914.)

—— Cholecyotitis complicating typhoid fever. (Amer. Jour. of the Medical Sciences, March, 1899.)

—— A few friendly bacteria. (New York Times, 18 Sept., 1898.)

—— Resistance to quinine of certain forms of malaria. (Bulletin of the Johns Hopkins Hospital, April, 1899, vol. x., p. 69.)

—— A visit to Bad Nanheim with the purpose of investigating the "Schott treatment" for chronic heart-disease. (Canada Lancet, July, 1898, vol. xxix., p. 535.)

Carpenter, R. C. Heating and ventilating buildings. 3d ed., revised. New York, 1898. 8°.

—— Electricity in cotton mills [discussion]. (Transactions of the Amer. Soc. of Mechanical Engineers. 1898, vol. xix., p. 474.)

—— Experiments on fans. (Heating and Ventilation, May, 1899.)

—— Formulae for flow of steam through pipes. (Sibley Jour., Dec., 1898, vol. xiii., p. 115.)

Paper presented at the New York meeting of the Amer. Soc. of Mechanical Engineers, Dec., 1898, to form a part of vol. xx. of their Transactions; also reprinted in Engineering [London], Jan., 1899.

—— Mechanical properties of certain aluminium alloys. (*Same*, Oct., 1898, vol. xiii., p. 10.)

—— Method of manufacture and tests of new seamless tubes. (Transactions of the Amer. Soc. of Mechanical Engineers, 1898, vol. xix., p. 754.)

—— A new belt dressing. (Railroad Gazette, 5 May, 1899.)

—— Non-conducting coverings of steam pipes [discussion]. (Transactions of the Amer. Soc. of Mechanical Engineers, 1898, vol. xix., p. 742.)

—— Report of a test of cling-surface applied to belting.

Published in several engineering papers.

—— Standard methods of engine testing [discussions]. (Transactions of the Amer. Soc. of Mechanical Engineers, 1898, vol. xix., pp. 718, 833.)

—— Test of a Nordberg pumping engine at Pittsburg, Pa. (Sibley Jour., April, 1899, vol. xiii., p. 274.)

Also in Engineering News, 4 May, 1899.

—— Theory of centrifugal blowers [a series of articles]. (Heating and Ventilation, Oct.-Dec., 1898.)

—— Theory of the centrifugal fan or blower. (Sibley Jour., April, 1899, vol. xiii., p. 261.)

Read before Amer. Soc. of Heating and Ventilating Engineers, Jan., 1899. Reprinted in Heating and Ventilation, Jan., Feb., 1899; also in Domestic Engineering, May, 1899.

—— Ventilation of buildings [a series of articles]. (Heating and Ventilation, July–Sept., 1898.)

Church, I. P. Mechanics of the cambered brake-beam. (Jour. of the Franklin Institute, Sept., 1898, vol. cxlvi., p. 215.)

Claypole, *Miss* A. M. The embryology and oögenesis of anurida maritima (Guér). (Jour. of Morphology, 1898, vol. xiv., p. 219.)

—— The embryology of the apterygota. (Zoological Bulletin, 1898, vol. xi., p. 69.)

Miss Claypole has also edited the review department in animal biology for the Jour. of Applied Microscopy.

Clinton, L. A. The construction of the stave silo. (Cornell University Agricultural Experiment Station. Bulletin, March, 1899, no. 167, p. 473.)

—— *See also* **Roberts, I. P.,** *and* **L. A. Clinton.** Third report on potato culture.

Comstock, J. H., *and* **V. L. Kellogg.** The elements of insect anatomy. Revised ed. Ithaca, N. Y., 1899. 8°. pp. 134. 10 *wdcts.*

Comstock, J. H., *and* **J. C. Needham.** The wings of insects [4 articles]. (Amer. Naturalist, Aug., 1898–Feb., 1899, vol. xxxii., xxxiii.)

Conner, L. A. A contribution to the study of cerebro-spinal meningitis. (Medical News. 3 June, 1899, vol. lxxiv., p. 685.)

Corson, H. An introduction to the prose and poetical works of John Milton, comprising all the autobiographic passages in his works, the more explicit presentations of his ideas of true liberty, Comus, Lycidas, and Sampson Agonistes; with notes and forewords. New York, 1899. 8°. pp. xxxii.+303. *Port.*

—— How to study Shakespeare. (Chicago Record, 4, 7 Oct., 1898.)

—— Introduction to 'A midsummer night's dream'. (*Same*, 21 Oct., 1898.)

—— The objective *vs.* the subjective theory in regard to Hamlet. (*Same*, 27 Dec., 1898.)

—— Points to be observed in the study of King John. (*Same*, 4 Nov., 1898.)

—— Shylock, the first human Jew in the English drama. (*Same*, 25 Nov., 1898.)

—— The witch agency in Macbeth. (*Same*, 6 Jan., 1899.)

Crandall, C. L. The transition curve by offsets and by deflection angles. 2d ed. New York, 1899. 8°. pp. vi.+99.

—— Electric power for windmills. (Railroad Gazette, 5 May, 1899, vol. xxxi., p. 318.)

Creighton, J. E. An introductory logic. New York, 1898. 8°. pp. xiv.+392.

—— American current literature on Kant. (Kant-Studien, Oct., 1898, Bd. iii., p. 148.)

—— Philosophy at the scientific associations. (Philosophical Review, Jan., 1899, vol. viii., p. 109.)

—— [Review of] Christianity and idealism; by J. Watson. (*Same*, Sept., 1898, vol. vii., p. 532.)

—— [Review of] The groundwork of science; by St. George Mivart. (Science. 27 Jan., 1899, N.S. vol. ix., p. 147.)

—— [Review of] Studies of good and evil; by J. Royce. (Philosophical Review, Jan., 1899, vol. viii., p. 66.)

—— *American editor.* Kant-Studien. Bd. iii. 1898–99.

—— *editor.* The philosophical review. July, 1898–May, 1899.

Curtis, C. B. Analysis of aqueous alcohol. (Jour. of Physical Chemistry, June, 1898, vol. ii., p. 371.)

De Garmo, C. Interest in study. (School and Home Jour., Dec., 1898, vol. xviii.)

—— Scientific *vs.* poetic study of education. (Educational Review, March, 1899, vol. xvii., p. 209.)

—— [Review of] The development of English thought; by S. N. Patten. (*Same*, May, 1899, vol. xvii., p. 484.)

—— *editor.* Tales of Troy. New ed. Bloomington, Ill., 1898. 16°.

Dennis, L. M., *and* C. G. Hopkins. Die Bestimmung von Kohlenoxyd, Methan und Wasserstoff durch Verbrennung. (Zeitschrift für anorganische Chemie, 1899, Bd. xix., p. 179.)

Also printed separately.

Durand, E. J. A washing apparatus. (Botanical Gazette, May, 1899, vol. xxvii., p. 394.)

Durand, W. F. Aids to candidates for U. S. marine engineers' license [9 articles]. (Marine Engineering, Oct., 1898–June, 1899, vol. ii., iii.)

—— Approximate methods for the treatment of differential equations. (Annals of Mathematics, July, 1898, vol. xii., p. 110.)

—— Boiler design, (Boiler Maker, Feb., 1899, vol. vii., p. 14.)

—— Electrical propulsion for torpedo boats. (Jour. of the Amer. Soc. of Naval Engineers, Jan., 1899, vol. xi., p. 53.)

—— Graphical methods for the reduction of experimental observations. (Sibley Jour., Nov., 1899, vol. xiii., p. 57.)

—— Improvement in the steam engine [2 articles]. (Amer. Electrician, Jan., Feb., 1899, p. 68.)

—— A new form of contour caliper. (Sibley Jour., Jan., 1899, vol. xiii., p. 129.)

Edgar, J. C. Obstetric teaching. (Obstetrics, June, 1899.)

Address delivered before the centennial meeting of the Medical and Chirugical Faculty of the State of Maryland, Baltimore, April 27, 1899, and printed in its Transactions.

—— The practical application of asepsis in normal labor. (Medical Record, 11 Feb., 1899, vol. lv., p. 193.)

Address delivered at the University of Pennsylvania Jan. 19, 1899. Also printed separately.

—— Some remarks on obstetrics in private practice. (New York Medical Jour., June, 1899.)

Read before the Bellevue Hospital Alumni Assoc.

Eldredge, A. H. Corliss governors, fly-wheel and other accidents. (Machinery, March, 1899.)

—— A description of the Reynolds Corliss valve gear. (*Same*, Dec., 1898.)

—— The design of the Reynolds Corliss valve gear. (*Same*, Jan., 1899.)

—— Details of design in the Corliss engine. (*Same*, Feb., 1899.)

—— The effect on indicator diagrams caused by various positions of the eccentric. (Power, Aug., 1898.)

—— Simple examples in engineering [4 articles in Line Steam]: Strength of bolts, Nov., 1898; Sizes of bolt heads and nuts, Dec., 1898; Power transmitted in line shafting, Jan., 1899; Diameter of shafting, power lost in transmission, Feb., 1899.

Eldredge, A. H., *and* **G. B. Preston.** Bicycle efficiency tests. (Machinery, July, 1898.)

Eldredge, A. H., *assistant editor.* Machinery, July, 1899.

In charge of the "How and why" department.

Elmer, H. C. A rejoinder. (Amer. Jour. of Philology, Oct., 1898, vol. xix., p. 349.)

Fernow, B. E. Report upon the forestry investigations of the U. S. Department of Agriculture, 1877–1898. Washington, 1899. 4°. pp. 401. (House Documents 55th Cong. 2d sess. no. 181.)

—— Aims and methods of the College of Forestry. (Science, 14 Oct., 1898, N.S. vol. viii., p. 494.)

142609

Read at the meeting of the Amer. Forestry Assoc., Boston, Aug., 1898. Reprinted in Bulletin no. 1 of the New York State College of Forestry, Sept., 1898.

—— Civilizing the wilderness. (Associated Press, May, 1899.)

—— Considerations in gathering forestry statistics. (Quarterly publications of the Amer. Statistical Assoc., Dec., 1898, vol. vi., p. 155.)

Also separately printed.

—— Method of taking a forest census of the United States. (Amer. Lumberman, March, 1899.)

—— Some peculiarities of wood. (Proceedings of the Amer. Institute of Architects, 1898, vol. xxxii., p. 55.)

Also printed separately.

—— Symposium: Method of the study of forestry. (Forester, April, 1899.)

—— *editor*. White pine, by E. M. Spaulding. (Bulletin of the Division of Forestry, U. S. Department of Agriculture, no. 22.)

Finch, W. A., *compiler*. Selected cases on the law of property in land. New York, 1898. 8°. pp. xxiv.+1149.

Fish, P. A. Practical exercises in comparative physiology and urine analysis. Ithaca, N. Y., 1898. 8°.

—— A simple test for the detection of albumen in urine. (Amer. Veterinary Review, Oct., 1898, vol. xxii., p. 462.)

—— The use of acetone in histology. (Jour. of Applied Microscopy, April, 1899, vol. ii., p. 322.)

Fraenkel, J. Syphilis und Gesichtslachmung. (New Yorker Medicinische Monatsschrift, April, 1899, vol. xi.)

—— Weiterer Beitrag zum Verhalten der Reflexe bei hohen Querschnitts-Myclitiden. (Deutsche Zeitschrift für Nervenheitkunde, Bd. xiii.)

Gage, S. H. The microscope; an introduction to microscopic methods and to histology. 7th ed., revised. Ithaca, N. Y., 1899. 8°. pp. xii.+235. *Figs.*

—— Biography of Professor Henry C. Coon. (Proceedings of the Amer. Microscopical Soc., 1878, vol. xx., p. 28.)

—— Biography of Professor William A. Rogers. (Jour. of Applied Microscopy, Sept., 1898, vol. i., p. 155.)

Also in Proceedings of the Amer. Microscopical Soc., 1898, vol. xx., p. 25.

—— Dishes for infiltrating tissues in paraffin. (*Same*, Feb., 1899, vol. ii., p. 265.)

—— Hibernation, transformation, and growth of the common toad (bufolentiginosus Americanus). (Proceedings of the Amer. Assoc. for the Advancement of Science, 1898, vol. xlvii., p. 374.)

—— The processes of life revealed by the microscope; a plea for physiological histology. (Annual report of the Smithsonian Institution for 1896, p. 381.)

—— Some apparatus to facilitate the work of the histological and embryological laboratory. (Jour. of Applied Microscopy, July, 1898, vol. i., p. 124.)

—— Transformation of the brook lamprey (lampetra Wilderi) and parasitism among lampreys. (Proceedings of the Amer. Assoc. for the Advancement of Science, 1898, vol. xlvii., p. 372.)

Gaston, C. P. R. An entrance idyl. (Cornell Magazine, Sept., 1898, vol. xi., p. 25.)

—— Lochinvar. (*Same*, Nov., 1898, vol. xi., p. 60.)

—— More stories. (Same, Sept., 1898, vol. xi., p. 8.)

—— R[obert] L[ouis] S[tevenson]. (*Same*, May, 1899, vol. xi., p. 283.)

—— A study in faints. (*Same*, Dec., 1898, vol. xi., p. 140.)

—— Verb + adverb in conversations. (*Same*, May, 1899, vol. xi., p. 298.)

—— Paragraphs about books. (*Same*, Sept., 1898-June, 1899, vol. xi.)

Including reviews of Kipling's Day's Work, p. 111; Larned's Rembrandt, p. 150; Parker's Battle of the Strong, p. 189; Stockton's Associate hermits, p. 191; Page's Red rock, p. 224; Weyman's Castle Inn, p. 225; Cable's Strong hearts, p. 264; Norris's McTeague, p. 302; Johnston's Prisoners of hope, p. 303.

—— *editor*. The Cornell magazine. Oct., 1898-June, 1899.

Gwyer, F. W. Observations on the use of the galvanic current in the treatment of false ankylosis. (Annals of Surgery, May, 1899.)

Read before the New York Surgical Society, Jan. 11, 1899. Also printed separately.

Harris, G. D. The fossil world and how man came to find it. (Chicago Record's Home Study Circle, June, 1899.)

—— The object of a geological survey of the State. (Proceedings of the State Agricultural Soc. of Louisiana, 1899, vol. xiii., p. 106.)

—— *editor*. Bulletins of American palaeontology. No. xi.-xii. Ithaca, N. Y., 1899. 2 nos. 8°. *Illus.*

xi. The lignitic stage, pt. II., by G. D. Harris.

xii. The Devonian and lower carboniferous faunas of Southern Indiana and Central Kentucky, by E. M. Kindle.

Hart, J. M. Schlutter's Old-English etymologies. (Modern Language Notes, Jan., 1899, vol. xiv., p. 11.)

—— *editor*. Christus redivivus, comoedia tragica, sacra et nova. Authore Nicolas Grimoaldo. MDXLIII. [Reprint of the original Cologne ed.] (Publications of the Modern Language Assoc., 1899, vol. xiv., p. 379.)

Haynes, I. S. The principles of conservative surgery. (Charlotte Medical Jour., May, 1899, vol. xiv., p. 508.)

Hewett, W. T. A German reader, edited with notes and a vocabulary. New York, 1899. sm. 8°. pp. ix.+422.

—— A study of Goethe's printed text: Hermann und Dorothea. (Publications of the Modern Language Assoc. of America, 1899, vol. xiv., p. 108.)

Also separately printed.

—— University life in the Middle Ages. (Harper's Magazine. May, 1898, vol. xcvi., p. 945.)

—— *editor*. Macmillan's German classics. New York, 1898–99. 8v. 16°. *Portrs.*

Contents Freytag's Die verlorene Handschrift, edited by K. M. Hewett.
Goethe's Egmont, edited by S. Primer.
Goethe's Hermann und Dorothea, edited by J. T. Hatfield.
Goethe's Iphigenie auf Tauris, edited by C. A. Eggert.
Lessing's Minna von Barnhelm, edited by S. W. Cutting.
Lessing's Nathan der Weise, edited by G. O. Curme.
Schiller's Jungfrau von Orleans, edited by W. Humphreys.
Schiller's Wilhelm Tell, edited by W. H. Carruth.

Hibbard, H. W. Summer locomotive shop-work. (Sibley Jour., Jan., 1899, vol. xiii., p. 141.)

Hopkins, G. S. The relation of the ligamentum nuchae to the first cervical vertebra in the horse. (Jour. of Comparative Medicine and Veterinary Archives, May, 1899, vol. xx., p. 271.)

Hotchkiss, H. J. A portable apparatus for photographing curves of two variable currents simultaneously. (Physical Review, March, 1899, vol. viii., p. 152.)

Also printed separately.

Huffcut, E. W. Syllabus on equity jurisdiction. Ithaca, 1898. 8°. pp. 20.

—— The war spirit the spirit of justice; an address delivered on Memorial Day, May 30, 1898, at the Lyceum, Ithaca, N. Y. [Ithaca, 1898.] 8°. pp. 20.

—— Constitutional aspects of the government of dependencies; address at the annual meeting of the Amer. Academy of Political and Social Science, April 7, 1899. (Foreign Policy of the United States, 1899, p. 19.)

Also printed separately.

Hutchinson, J. I. The Hessian of the cubic surface. (Bulletin of the Amer, Mathematical Soc., March, 1899, 2 s. vol. v., p. 282.)

Jacoby, H. S. The construction of models by students as an aid in teaching descriptive geometry. (Proceedings of the Soc. for the Promotion of Engineering Education, 1898, vol. vi., p. 88.)

—— On the design of a two-hinged arch rib. (Transactions of the Assoc. of Civil Engineers of Cornell University, 1899, vol. vii., p. 89.)

Jenks, J. W. France [2 articles]. (Chicago Record's "Governments of the World To-day," 8, 15 Feb., 1899.)

—— Recent legislation and adjudication on trusts. (Quarterly Jour. of Economics, July, 1898, vol. xii., p. 461.)

—— Remarks, as chairman of the section on finance, at the meeting of the Amer. Social Science Assoc., Aug.. 1898. (Jour. of Social Science, Dec. 1898, no. 36, p. 164.)

—— Remarks on the necessity of teaching the duties of citizenship in the public schools, at the meeting of the Association of Colleges and Preparatory Schools of the Middle States and Maryland, Nov. 26, 1898. (Regents' Bulletin, May, 1899, no. 47, p. 162.)

—— Society as an organism [discussion, at the meeting of the Amer. Social Science Assoc., Aug., 1898]. (Jour. of Social Science, Dec., 1898, no. 36.)

—— [Review of] France; by J. E. C. Bodley. (Yale Review, Aug. 1898, vol. vii., p. 220.)

—— [Review of] Modern political institutions; by S. E. Baldwin. (Amer. Historical Review, April, 1899, vol. iv., p. 582.)

Johnston, J. C. The cutaneous paratuberculosis. (Philadelphia Monthly Medical Jour., Feb., 1899.)

—— Notes on cases of syphilis [2 articles]. (Medical News, 1898, vol. lxxii., pp. 107, 303.)

—— A popular, persistent dermatosis; report on an undescribed disease. (Jour. of Cutaneous and Genito-Urinary Diseases, Feb., 1899, vol. xvii., p. 49.)

Kammerer, F. Remarks on the incision at the outer border of the rectus for appendicitis. (Medical Record, 10 June, 1898, vol. lv., p. 809.)

Keyes, E. L., *jr. See* **Stimson, L. A.,** *and* **E. L. Keyes,** *jr.*

Kimball, D. A. The torque for hoisting engines. (Sibley Jour., Feb., 1899, vol. xiii., p. 163.)

Kingsbury, B. F. The regeneration of the intestinal epithelium in the toad during transformation. (Proceedings of the Amer. Microscopical Soc., 1898, voi. xx., p. 45.)

Knight, C. H. A case of spastic aphonia. Cases of laryngeal neoplasm treated by instillations of alcohol. (Transactions of the Amer. Laryngological Assoc., 1898, vol. xx., p. 213.)

—— Foreign bodies in the larynx. (Medical News, 15 April, 1899, vol. lxxiv., p. 458.)

—— Transillumination in the diagnosis of sinus disease. (Laryngoscope, July, 1898, vol. v., p. 47.)

Kortright, F. L. The deliquescence of potassium nitrate, sodium nitrate, and ammonium nitrate. (Jour. of Physical Chemistry, May, 1899, vol. iii., p. 290.)

—— [Review of] Chemistry in daily life; by Lassar-Cohn. (Science Teacher, March, 1899, vol. ii., p. 184.)

—— [Review of] Outlines of industrial chemistry; by F. H. Thorp. (Jour. of Physical Chemistry, Jan., 1899, vol. iii., p. 50.)

Lauman, G. N., *and* **L. H. Bailey.** Annual flowers. (Cornell University Agricultural Experiment Station. Bulletin, Jan., 1899, no. 161, p. 295.)

Law, J. Legislation in regard to tuberculosis in cattle. (Philadelphia Medical Jour., 11 Feb., 1899, vol. iii., p. 296.)

—— Tuberculosis in cattle and its control. (Cornell University Experiment Station. Bulletin, July, 1898, no. 150, p. 3.)

Lee, D. C. Quiz-book of Theta Delta Chi. Pt. i. Ithaca, N. Y., 1899. 8°.

Privately printed.

Loomis, H. P. The pretubercular stage of phthisis, or the condition which antedates tuberculosis development, and some aids to its diagnosis. (Medical Record, 10 Dec., 1898, vol. liv., p. 829.)

McMahon, J. The fiftieth anniversary meeting of the American Association for the Advancement of Science. (Bulletin of the Amer. Mathematical Soc., Nov., 1898, 2s vol. v., p. 87.)

—— *and* **V. Snyder.** Elements of the differential calculus. New York, [1898]. 8°. pp. xiv.+337. *Figs.* (Cornell mathematical series.)

Martin, C. A. The face-bonding of broken ashlar. (Amer. Architect, 11 Feb., 1899, vol. lxiii., p. 45.)

Merritt, E. G. The magnetic deflection of reflected kathode rays. (Physical Review, Nov., 1898, vol. vii., p. 217.)

Read at the Meeting of the Amer. Assoc. for the Advancement of Science, Boston, 1898.

—— A simple mechanical illustration of apparent potential energy which is really kinetic. (*Same*, Aug., 1898, vol. vii., p. 106.)

—— The Wehnelt electrolytic interrupter. (Proceedings of the Electrical Soc. of Cornell University, 1898–99, vol. vi., p. 53.)

—— [Review of] Canada's metals; by W. C. Roberts-Austen. (Physical Review, July, 1898, vol. vii., p. 64.)

—— [Review of] The discharge of electricity through gases; by J. J. Thomson. (Science, 24 Feb., 1899, N. S. vol. ix., p. 289.)

—— [Review of] Luce e raggi Roentgen; by O. Murani. (Physical Review, Aug., 1898, vol. vii., p. 124.)

—— [Review of] La teoria dei raggi Roentgen; by F. Re. (*Same*, Nov., 1898, vol. vii., p. 254.)

—— *and* **O. M. Stewart.** The electrical properties of the vapors from the carbon arc. (*Same*, Sept., 1898, vol. vii., p. 129.)

Merritt, E. G., *editor*. The Physical Review, July, 1898–June, 1899.

—— *See also* **Nichols, E. L.,** *and* **E. G. Merritt.** The photography of manumetric flames.

Miller, G. A. Note on Burnside's theory of groups of a finite order. (Bulletin of the Amer. Mathematical Soc., Feb., 1899, vol. v., p. 249.)

—— On several categories of primitive substitution groups. (Amer. Mathematical Monthly, April, 1899, vol. v., p. 97.)

—— On several points in the theory of groups of a finite order. (*Same*, Sept., 1898, vol. v., p. 196.)

—— On the groups which can be represented as multiply transitive substitution groups. (Messenger of Mathematics, Nov., 1898, vol. xxvii., p. 104.)

—— On the Hamiltonian groups. (Bulletin of the Amer. Mathematical Soc., July, 1898, vol. iv., p. 510.)

—— On the operation groups of order 48 and those of order $2p^3$, p being any prime number [abstract]. (Proceedings of the Amer. Assoc. for the Advancement of Science, 1898, vol. xlvii., p. 74.)

—— On the operation groups whose order is less than 64 and those whose order is $2p^3$, p being any prime number. (Quarterly Jour. of Mathematics, Dec., 1898, vol. xxx., p. 243.)

—— On the perfect groups. (Amer. Jour. of Mathematics, July, 1898, vol. xx., p. 277.)

—— On the primitive substitution groups of degree sixteen. (*Same*, July, 1898, vol. xx., p. 229.)

—— On the quaternion group. (Proceedings of the Amer. Philosophical Soc., Dec., 1898, vol. xxxvii., p. 312.)

—— On the representation of a group of a finite order as a substitution group. (Messenger of Mathematics, Feb., 1899, vol. xxviii., p. 149.)

—— On the simple isomorphisms of a Hamiltonian group to itself. (Bulletin of the Amer. Mathematical Soc., March, 1899, vol. v., p. 292.)

—— On the total number of the transitive substitution groups that are simply isomorphic to a given group. (Messenger of Mathematics, Oct. 1898, vol. xxvii., p. 84.)

—— On the transitive substitution groups of degree seventeen. (Quarterly Jour. of Mathematics, June, 1899, vol. xxxi., p. 49.)

—— Report on recent progress in the theory of groups of a finite order. (Proceedings of the Amer. Assoc. for the Advancement of Science, 1898, vol. xlvii., p. 79.)

Also in Bulletin of the Amer. Mathematical Soc., Feb., 1899, 2 s. vol. v., p. 227.

—— Sur les groupes d'opérations. (Comptes rendus de l'Académie des Sciences, Jan., 1899, tom. cxxviii., p. 277.)

Miller, *Mrs.* **M. F. R.** [How to make school grounds attractive.] (Arbor Day Manual, 5 May, 1899, p. 4.)

Moler, G. S. Speed regulation of direct current motors. (Proceedings of the Electrical Soc. of Cornell University, 1898–99, vol. vi., p. 67.)

Moore, V. A. Laboratory directions for beginners in bacteriology. Ithaca, N. Y., 1898. 8°.

—— Remarks on anthrap and rabies, with special reference to outbreaks recently investigated. (4th annual report of the New York State Commissioner of Agriculture, 1897.)

—— A report concerning the nature of infectious swine diseases in the State of New York. (*Same*, p. 92.)

—— *and* **A. R. Ward.** An inquiry concerning the source of gas and taint producing bacteria in cheese curd. (Cornell University Agricultural Experiment Station. Bulletin, Jan., 1899, no. 158, p. 221.)

Murray, D. A. An introductory course in differential equations. Revised ed. London, 1898. 8°. pp. 236.

—— [Review of] Differenzrechnung; von Markoff. (Bulletin of the Amer. Mathematical Soc., March, 1899, vol. v., p. 313.)

—— [Review of] An elementary course of infinitesimal calculus; by H. Lamb, (Physical Review, Dec., 1898, vol. vii., p. 308.)

—— [Review of] An essay on the foundations of geometry; by B. A. W. Russell. (Philosophical Review, Jan., 1899, vol. viii., p. 49.)

Myers, B. D. Picro-carmine and alum-carmine as counter stains. (Jour. of Applied Microscopy, Sept., 1898, vol. i., p. 174.)

Also in the Transaction of the Amer. Microscopical Soc., 1898, vol. xx., p. 337.

Nammack, C. E. A case of narcolepsy. (Medical Record, 4 March, 1899, vol. lv., p. 317.)

—— The differential diagnosis and treatment of Cuban and camp fevers. (*Same*, 1 Oct., 1898, vol. liv., p. 471.)

Newcomb, J. E. Diseases of the tonsils, palate and pharynx. (Amer. Text-book of Diseases of the Eye, Ear, Nose, and Throat, edited by G. E. de Schweinitz and V. A. Randall. 1899. p. 921.)

—— Nasal insufficiency due to exaggerated prominence of the anterior arch of the cervical vertebræ. (Annals of Otology, Rhinology and Laryngology, Feb., 1899, vol. viii., p. 22.)

Also separately printed.

—— The supra-renal bodies; some remarks upon their physiology and therapy, with special reference to rhinology. (Laryngoscope, Jan., 1899, vol. vi., p. 36.)

Nichols, E. L. The American Association for the Advancement of Science [note on the Boston meeting, 1898]. (Physical Review, Sept., 1898, vol. vii., p. 188.)

—— The application of photography to the study of the manometric flame. (Nature, 2 Feb., 1899, vol. lix., p. 320.)

—— Note on the coefficient of expansion of ice. (Physical Review, March, 1899, vol. viii., p. 184.)

—— On the density of ice. (*Same*, Jan., 1899, vol. viii., p. 21.)

—— Storage batteries [abstract of an address.] (Proceedings of the Electrical Soc. of Cornell University, 1898–99, vol. vi., p. 57.)

—— [Review of] Barometrical determination of heights; by F. J. B. Cordeiro. (Physical Review, April, 1899, vol. viii., p. 255.)

—— [Review of] Die elektrodynamischen Grundgesetze und das eigentliche Elementargesetz; von F. Kerntler. (*Same*, Jan., 1899, vol. viii., p. 61.)

—— [Review of] Harper's scientific memoirs, no. 1, 2. (*Same*, Feb., 1899, vol. viii., p. 128.)

—— [Review of] Leçons de chimie générale; par P. Schulzenberger. (*Same*, Dec., 1898, vol. vii., p. 313.)

—— [Review of] Lecture-notes on the theory of electrical measurements; by W. A. Anthony. (*Same*, p. 314.)

—— [Review of] Les modifications permanentes du verre et le déplacement du zéro des thermomètres; par L. Marchis. (*Same*, March, 1899, vol. viii., p. 190.)

—— [Review of] Ostwald's Klassiker der exakten Wissenschaften, no. 93, 96. (*Same*, Dec., 1898' vol. vii., p. 315.)

—— *Same*, no. 101, 102. (*Same*, April, 1899, vol. viii., p. 255.)

—— [Review of] Practical electricity and magnetism; by J. Henderson. (*Same*, Nov., 1898, vol. vii., p. 252.)

—— [Review of] Der tägliche Wärmeumsatz im Boden und die Wärmestrahlung zwischen Himmel und Erde; von T. Homen. (*Same*, April, 1899, vol. viii., p. 254.)

Nichols, E. L., *and* **W. S. Franklin.** The elements of physics. New ed., entirely rewritten. Vol. i. New York, 1898. 8°.

Nichols, E. L., *and* **E. G. Merritt.** The photography of manometric flames. (Physical Review, Aug., 1898, vol. vii., p. 93.)

Nichols, E. L., *editor.* The physical review, July, 1898–June, 1899.

Norris, H. H. The inspection of electric car equipments. (Proceedings of the Electrical Society of Cornell University, 1898–99, vo vi., p. 25.)

—— The primary voltaic cell as a transformer of energy. (*Same*, p. 1.)

Also in Sibley Jour., Feb., 1899, vol. xiii., p. 187.

—— The rotating magnetic field. (Sibley Jour., Dec., 1898, vol. xiii., p. 87.)

Northup, C. S. David Starr Jordan. (Cornell Alumni News, 10 May, 1899, vol. i., p. 39.)

—— Keats. (Cornell Magazine, June, 1899, vol. xi., p. 346.)

—— [Review of] A German reader, edited with notes and a vocabulary by W. T. Hewett. (Cornell Alumni News, 19 April, 1899, vol. i., p. 20.)

—— *editor.* Cornell alumni news. April–June, 1899.

Ogden, H. N. Sewer design. New York, 1899. 12°. pp. xi.+234.

Rowlee, W. W. Description of two willows from Central Mexico. (Botanical Gazette, Feb., 1899, vol. xxvii., p. 136.)

—— Effect of the electric light upon the tissues of leaves. (Proceedings of the Soc. for the Promotion of Agricultural Science, 1898, vol. xix., p. 50.)

—— Historical trees of America: 1. The Washington elm. (Plant World, May, 1899.)

—— *and* **G. T. Hastings.** The seeds and seedlings of some amentiferae. (Botanical Gazette, Nov.. 1898, vol. xxvi., p. 349.)

Polk, W. M. Cornell University: addresses at the opening of the Medical College by J. G. Schurman and W. M. Polk. [Ithaca, N. Y.], 1898. 8°. pp. 22.

—— The clinical effect of thyroid extract upon fibroid tumors of the uterus. (Medical News, 4 Jan., 1899, vol. lxxiv., p. 33.)

—— Suprapubic hysterectomy with intraperitoneal treatment of the stump in pregnancy at term for obstructed labor. (Medical Record, 4 March, 1899, vol. lv., p. 305.)

Preston, G. B. *See* **Eldredge, A. H.,** *and* **G. B. Preston.** Bicycle efficiency tests.

Reid, D. *See* **Reid, J. S., and D. Reid.** Mechanical drawing.

Reid, J. S., *and* **D. Reid.** Mechanical drawing and design. New York, 1898. 8°. pp. 48.

Ries, H. The kaolins and fire-clays of Europe. Washington, 1899. 8°. pp. 114.

Extract from the 19th annual report of the U. S. Geological Survey, 1897–98, part vi.

—— Statistics of quartz and feldspar. Washington, 1899. 8°.

From same.

—— Articles relating to geology and mineralogy. (International Encyclopedia, supplement, 1898.)

—— Clay-working in Greece. (Clay Worker, Nov., 1898, vol. xxix., p. 357.)

—— Clay-working in Italy. (*Same*, March, 1899, vol. xxx., p. 250.)

—— Clay-working in Turkey. (*Same*, July, 1898, vol. xxix., p. 9.)

—— English china clays. (*Same*, Aug., 1898, vol. xxix., p. 96.)

Roberts, I. P. Agriculture at Cornell; annual report of the directors for 1897–98. Ithaca, N. Y., 1898. 8°. pp. 7.

—— Articles in the Country Gentleman, Oct., 1898–June, 1899, vol. lxiii., lxiv.:

Running a farm, 13 Oct., p. 803; Grass on worn-out land, 3 Nov., p. 866; Lime and farm-yard manure, 1 Dec., p. 946; Italian millet or Hungarian grass, 12 Jan., p. 24; Farming in Virginia, 16 March, p. 204; This land needs potash,—Beans, tomatoes, potatoes,—Must ensilage corn be cut?—Round silo, ventilation, 30 March, p. 244; A stable for dairy cows, 4 May, p. 352; Beets, carrots, and turnips, 11 May, p. 363; An agricultural education, 1 June, p. 426.

—— Articles in the Rural New Yorker, Sept., 1898–May, 1899, vol. lvii., lviii.:

Drilling wheat both ways, 17 Sept., p. 641; New York State horses, 1 Oct., p. 682; Hogs or sheep in apple orchards, 26 Nov., p. 800; A question of tile drainage, 3 Dec., p. 815; A paint for spraying rough surfaces, 31 Dec., p. 881; The lazy plant food in the soil, 15 April, p. 279; Bald or bearded wheat,—Smother crop for weeds, 29 April, pp. 318, 320; What dairy crops? 6 May, p. 345.

—— Do agricultural colleges seduce from agriculture? (Farmer's Voice, 10 Sept., 1899, vol. xiii., p. 9.)

—— The farm as a source of income. (Report of the Superintendent of Farmers' Institute of the Province of Ontario, 1897–8, p. 39.)

—— The need of agricultural education in secondary schools. (Agricultural education, June, 1899, vol. 1., p. 64.)

—— *and* L. A. Clinton. Third report on potato culture. (Cornell University Agricultural Station. Bulletin, Dec., 1898, no. 156, p. 175).

Schmidt, N. Bibliography to a course of lectures on the Old Testament and on Judaism. Meadville, 1899. 8°. pp. 8.

—— Syllabus of a course of five lectures on Judaism in the light of modern research. Meadville, 1899. 8°. pp. 8.

—— Syllabus of a course of five lectures on the Old Testament in the light of modern research. Meadville, 1898. 8°. pp. 7.

—— The neglected baptism. (Biblical World, April, 1899, vol. xiii., p. 297.)

—— Religious life in Arabia before Mohammed. (Cambridge Tribune, 29 April, 1899.)

—— [Review of] The book of the twelve prophets; by G. A. Smith. (New World, Sept., 1898, vol. vii., p. 586.)

—— [Review of] The Hittites and their language; by C. R. Conder. (*Same*, March, 1899, vol. viii., p. 164.)

Schurman, J. G. Cornell University: addresses at the opening of the Medical College by J. G. Schurman and W. M. Polk. [Ithaca, N. Y.], 1898. 8°. pp. 22.

—— Cornell University: sixth annual report of President Schurman, 1897–98. Ithaca, N. Y., 1898. 8°. pp. 61+ci.

—— Proclamation [of the U. S. Commission on Philippine affairs] to the people of the Philippine Islands. Manila, 1899. Broadside.

J. G. Schurman, President of the Commission.

—— *editor*. The philosophical review. July, 1898–May, 1899.

Seth, J. The Scottish contribution to moral philosophy; inaugural lecture. Edinburgh, 1898. 8°.

—— A study of ethical principles. 4th ed. Edinburgh, 1898. 8°.

Shaffer, N. M. On the care of crippled and deformed children. (New York Medical Jour., 9 July, 1898.)

Read before the National Conference of Charities and Corrections, May 25, 1898.

—— On the cause and mechanical treatment of subluxation of the semi-lunar cartilages of the knee joint. (Annals of Surgery, Oct., 1898.)

Sharp, C. H. [Review of] The elements of physics; by A. P. Gage. (Physical Review, March, 1899, vol. viii., p. 187.)

Simpson, M. Eine Vergleichung der Wieland'schen Shakespeare-Übersetzung mit dem Originale.—Inaug.-Diss. München, 1898. 8°. pp. 133+1.

Slingerland, M. V. Applied photography in economic entomology. (Photogram, May, 1899, vol. vi., 141.)

—— Cheap substitutes for Paris green. (Rural New Yorker, 25 March. 1899, vol. lviii., p. 131.)

Also in Amer. Agriculturist, 15 April, 1899, vol. lxiii., p. 479.

—— The Colorado potato beetle. (*Same*, 16 July, 1898, vol. lvii., p. 495.)

—— Emergency report on tent caterpillars. (Cornell University Agricultural Experiment Station. Bulletin, May, 1899, no. 170, p. 557.)

—— The enemies of potatoes and how to combat them. (Amer. Agriculturist, 13, 20 May, 1899, vol. lxiii., pp. 612, 642.)

—— The grape-vine flea-beetle. (Cornell University Agricultural Experiment Station. Bulletin, Dec., 1898, no. 157, p. 190.)

—— How insects spend the winter. (Rural New Yorker, 28 Jan., 18 Feb., 1899, vol. lviii., pp. 55, 116.)

—— Insect pests of 1898; report as chairman of the committee on entomology. (Proceedings of the Western New York Horticultural Soc., 1899, vol. xliv., p. 71.)

—— Killing mealy bugs under glass. (Rural New Yorker, 5 Nov., 1898, vol. lvii., p. 753.)

—— Notes on injurious insects: answers to correspondents [45 articles]. (*Same*, 2 July, 1898–1 June, 1898, vol. lvii., lviii.)

—— Report of the Entomologist, 1897–98. (Cornell University Experiment Station. Annual report, 1898, vol. xi., p. x.)

—— Scale insects on California fruit. (Rural New Yorker, 17 Sept., 1898, vol. lvii., p. 640.)

—— Some new notions about old insects. (Transactions of the Massachusetts Horticultural Soc., 1898, pt. 1.)

Snyder, V. Asymptotic lines on ruled surfaces having two rectilinear directrices. (Bulletin of the Amer. Mathematical Soc., April, 1899, 2s. vol. v., p. 343.)

This and the following paper were read before the Amer. Mathematical Soc.

—— Lines of curvature on annular surfaces having the spherical directrices [abstract]. (*Same*, p. 338.)

—— [Review of] Einleitung in die Theorie der Bessel'schen Funktionen; von J. H. Graf und E. Gubler. (*Same*, Feb., 1899, 2s. vol. v., p. 25.)

—— [Review of] Theorie der Abel'schen Funktionen; von H. Stahl. (*Same*, March, 1899, 2s. vol. v, p. 308.)

—— *See also* **McMahon, J.,** *and* **V. Snyder.** Elements of differential calculus.

Stephens, H. Morse. Administrative history of the British dependencies in the Further East. (Amer. Historical Review, Jan., 1899, vol. iv., p. 246.)

—— History and biography in 1898. (Book Reviews, May, 1899, vol. vii., p. 185.)

—— Lord Salisbury. (Chautauquan, May, 1899, vol. xxix., p. 119.)

—— Molière [2 articles]. (Chicago Record, 15, 16 June, 1889.)

—— Sir Robert Peel. (Chautauquan, Dec., 1898, vol. xxviii., p. 231.)

—— [Reviews of] Histoire générale du IVe siècle à nos jours, publiée sous la direction de MM. E. Lavisse et A. Rambaud, tom. viii.: La révolution française (1789–1799); Études et leçons sur la révolution française, par F. A. Aulard. (Amer. Historical Review, July, 1898, vol. iii., p. 715.)

—— [Review of] Mémoires du comte Ferrand, publiés par le vicomte de Broc. (*Same*, p. 720.)

—— [Review of] Mémoires et notes de Choudier, publiés par V. Barrucand. (*Same*, p. 718.)

—— *associate editor.* The American historical review, July, 1898–June, 1899.

Stewart, O. M. Becquerel or uranium rays and other "new" rays and their relation to X-rays. (Proceedings of the Electrical Soc. of Cornell University, 1898–99, vol. vi., p. 63.)

—— *See also* Merritt, E. G. *and* **O. M. Stewart.** The electrical properties of the vapors from the carbon arc.

Stimson, L. A. A practical treatise on fractures and dislocations. New York, 1899. 8°. pp. xix.+822. 20 *plates* and 326 *figs.*

—— *and* **E. L. Keyes,** *jr.* Dislocations. (Annual and analytical cyclopædia of practical medicine; by C. E. de M. Sajous, 1899, vol. iii., p. 1.)

—— Fractures. (*Same*, p. 276.)

Stone, J. L. Coöperative experiments in potato culture. (Cornell University, College of Agriculture. Circular, Nov., 1898, no. 18.)

—— Observations and conclusions based upon a study of field conditions [for sugar beet culture.] (Cornell University Agricultural Experiment Station. Bulletin, March, 1899, no. 166, p. 419.)

—— Tables for computing rations for farm animals. (*Same*, Nov., 1898, no. 154, p. 135.)

Swinburne, G. K. Cystitis due to colon bacillus complicated by phosphatic calculi. (Jour. of Cutaneous and Genito-urinary Diseases, Aug., 1898, vol. xvi., p. 374.)

—— Some observations in the treatment of acute gonorrhœa. (*Same*, July, 1898, vol. xvi., p. 324.)

—— A study in the treatment of acute gonorrhœa. (*Same*, March, 1899, vol. xvii., p. 103.)

Tanner, J. H., *and* **J. Allen.** An elementary course in analytic geometry. New York, 1898. 12°. pp. 400. (Cornell mathematical series.)

Published Sept., 1898, reprinted Dec., 1898, and March, 1899.

—— *Same.* Answers. New York, 1899. 12°. pp. 25.

Tarr, R. S. New editions of the following works have appeared:

Elementary geology, 3d, 4th eds.

Elementary physical geography, 8th, 9th eds.

First book of physical geography, 7th, 8th eds.

—— The bad lands of North Dakota. (Independent, 22 Sept., 1898, p. 837.)

—— Geology of the Yellowstone Park [2 articles.] (*Same*, 17 Nov., 1 Dec., 1898, pp. 1406, 1572.)

—— The grand cañon of the Colorado. (*Same*, 23 March, 1899, p. 824.)

—— The physical geography of New York State. Pts. v.-viii. (Bulletin of the Amer. Geographical Soc., 1898–99, vol. xxx., p. 375, xxxi., pp. 1, 101, 217.)

Contents:—v. The rivers of New York.—vi. Lakes and swamps.—vii., viii.—The Great Lakes and Niagara.

—— Physiographic notes. (*Same*, 1890, vol. xxxi., pp. 35, 156, 256.)

—— A summer shower. (Nature Study Bulletin, June, 1899, no. 1, p. 5.)

—— Wave formed cuspate forelands. (Amer. Geologist, July, 1898, vol. xxii., p. 1.)

—— [Reviews] Four recent notable books of travel: Cuba and Porto Rico with the other islands of the West Indies, by R. T. Hill; The Philippine Islands aud their people, by D. C. Worcester; Through

Asia, by S. Hedin; Northward over the "great ice," by R. E. Peary. (Book Reviews, April, 1899, vol. vii., p. 137.)

—— *editor.* Bulletin of the American Geographical Society. Jan.–June, 1899.

Thompson, W. G. Articles on Fevers. (Treat's Medical Annual, 1898, 1899.)

—— The new army treatment of typhoid fever. (Medical Record, 10 Sept., 1898. vol. liv., p. 392.)

—— Unusual sequelae of enteric fever. (Presbyterian Hospital Reports, 1898, vol. iii.)

Thurston, R. H. New editions of the following works have appeared, :

Friction and lost work in machinery. 6th ed.
Non-metallic materials of engineering. 5th ed.
Stationary engines. 6th ed.
Treatise on iron and steel. 7th ed.

—— Agricultural electrotechnics. (Science, 31 March, N. S. vol. ix., p. 480.)

—— The animal as a prime mover. (Annual Report of the Smithsonian Institution for 1896, p. 297.)

—— Anti-friction alloys. (Science, 17 Feb., 1899, N. S. vol. ix., p. 247.)

—— Applied science in the Navy. (*Same*, 9 Dec., 1898, N. S. vol. viii., p. 801.)

Also in Scientific American Supplement, 22 Dec., 1898.

—— Aristotle and modern engineering. (Cassiers Magazine, Jan., 1899, vol. xv., p. 195.)

Also in the Steamship, Feb., 1899, p. 534.

—— Corrosion of iron and steel. (Engineering News, 3 Nov., 1898, vol. xl., p. 281.)

Also in Marine Record, Nov., 1898.

—— Diagrammes et stéréogrammes du functionnement des machines à vapeur. (Revue de Mécanique, Nov., 1898, tom. iii., p. 534.)

—— Economics in manufactures. (Science, 21 April, 1899, N. S. vol. ix., p. 583.)

—— Economics of engineering of power stations. (Sibley Jour., April, 1899, vol. xiii., p. 258.)

Also in the Engineer, Jan., 1899.

—— Electrometallurgy as a department of electrical engineering. (Proceedings of the Electrical Soc. of Cornell University, 1898–99, vol. vi., p. 27.)

—— Engineering and the professions in education. (Science, 17 March, 1899, N. S. vol. ix., p. 407.)

—— Overpressure in the schools. (Scientific Amer, Supplement, 4 Feb., 1899, vol. xlvii., p. 19325.)

—— Professional and academic schools. (Educational Review, Jan., 1899, vol. xvii., p. 16.)

Paper read before the annual meeting of the Assoc. of College and Preparatory Schools of the Middle States and Maryland, Nov. 25, 1898.

—— Professional schools *vs.* business. (Science, 10 Feb., 1899, N. S. vol. ix., p. 207.)

—— Recent practice in superheating steam. (Engineering News, 6 April, 1899, vol. xli., p. 212.)

—— Report of the director of Sibley College. (Annual report of the President of Cornell University, 1897–98, appendix, p. li.)

Also separately printed.

—— Reports of the finance committee of the city of Ithaca, 1894–98. (Ithaca Jour., 1894–98, vol. xliv.-liii.)

—— Robert Fulton and the steamboat. (Scientific Amer., 21 Jan., 1899, vol. lxxx., p. 37.)

—— Safe working stresses. (Sibley Jour., Nov. 1898, vol. xiii., p. 47.)

—— Steam engine development. (National Engineer, Jan., 1899, p. iv.)

—— Steam engine specifications. (Engineering Record, 15 April, 1899, vol. xxxix., p. 450.)

—— Stress-strain relations of rubber [abstract]. (Proceedings of the Institution of Civil Engineers, 1899, vol. cxxxv., p. 73.)

—— Suppression of smoke. (Science, 13 Jan., 1899, N. S. vol. ix., p. 55.)

—— Thermal efficiency of steam-engines. (Science, 2 Dec., 1898, N. S. vol. viii., p. 764.)

Also in Sibley Jour., Jan., 1899, vol. xiii., p. 136.

—— Thermodynamic action of steam gas. (*Same*, 26 May, 1899, N. S. vol. ix., p. 753.)

—— Theory of the steam engine [commenting on articles of M. Nadal in the Revue de Mécanique]. (Science, 5 May, 1899, N. S. vol. ix., p. 659.)

—— Theory, organization and conduct of professional schools. (Proceedings of the Soc. for the Promotion of Engineering Education, 1898, vol. vi.)

—— Value of the steam jacket. (Power, Jan., 1899.)

—— [Review of] Thermodynamics of the steam-engine; by C. H. Peabody. (Science, 11 Nov., 1898, N. S. vol. viii., p. 676.)

—— [Review of] Up-to-date air-brake catechism; by R. H. Blackall. (*Same*, 4 Nov., 1898, N. S. vol. viii., p. 637.)

—— *associate editor*. Science, a weekly journal devoted to the advancement of science. July, 1898–July, 1899.

Editor for engineering.

Titchener, E. B. An outline of psychology. 4th ed. London, 1898. 8°. pp. xiv.+352.

—— The feeling of being stared at [4 articles.] (Science, 23 Dec., 1898, 6 Jan., 12 May, 2 June, 1899, N. S. vol. viii., ix.)

—— Modern psychology and education. II., III. (Jour. of Education, New England and National, 30 June, 27 Oct., 1898, vol. xlviii., pp. 7, 267.)

—— The postulates of a structural psychology. (Philosophical Review. Sept., 1898, vol. vii., p. 5.)

—— A psychological laboratory. (Mind, July, 1898, N. S. vol. vii., p. 3.)

—— *American editor.* Mind, or quarterly review of psychology and philosophy, July, 1898–April, 1899.

—— *associate editor.* American journal of psychology, July, 1898–April, 1899.

—— *editor.* Cornell University psychological bulletins:

xxiii. Darwin's idea of mental development; by M. H. Carter. (Amer. Jour. of Psychology, July, 1898, vol. ix., p. 534.)

xxiv. The applicability of Weber's law to smell; by E. A. McC. Gamble. (*Same*, Oct., 1898, vol. x., p. 82.)

xxv. On the cutaneous perception of form; by D. R. Major. (*Same*, p. 143.)

xxvi. Individual psychology; a study in psychological method; by S. E. Sharp. (*Same*, April, 1899, vol. x,, p. 329.)

Trevor, J. E. Problems in chemistry. Ithaca, N. Y., 1898. 8°. pp. 52.

—— The electromotive forces of concentration cells. (Jour. of Physical Chemistry, Feb., 1899, vol. iii., p. 95.)

—— Notes on the energy theory. (*Same*, June, 1899, vol. iii., p. 339.)

—— *editor.* The journal of physical chemistry, Oct., 1898–June, 1899.

Trowbridge, A. B. [Letter to the editor.] (Architectural Review, May, 1899, vol. vi., p. 66.)

Tyler, C. M. [Review of] The evolution of the idea of God; by G. Allen. (Amer. Jour. of Theology, Jan., 1899, vol. iii., p. 143.)

—— [Review of] La religion de la science et de l'esprit; par J. Strada. (Philosophical Review, Jan., 1899, vol. viii., p. 93.)

Van Pelt, J. F. An unaffected school of modern architecture in America—will it come? (Catalogue of the T Square Club Exhibition, 1899, p. 28.)

Wheeler, B. I. Alexander the Great [8 articles]. (Century Magazine, Nov., 1898–June, 1899, vol. lvii, lviii.)

—— Herodotus. (Warner's Library of the World's Best Literature, 1898, vol. xiii., p. 7285.)

—— The old world in the new. (Atlantic Monthly, Aug., 1898, vol. lxxxii., p. 145.)

—— The seven wonders of the world [7 articles]. (Century Magazine, March–Sept. 1898, vol. lv., lvi.)

Whipple, G. M. The influence of forced respiration on psychical and physical activity. (Amer. Jour. of psychology, July, 1898, vol. ix., p. 560.)

—— On simultaneous clicks and flashes. (*Same*, Jan., 1899, vol. x., p. 280.)

White, A. C. Marcus Aurelius and St. Paul as representatives of Paganism and Christianity. (Kirkland prize book, 1899. 3d series. p. 64.)

Whitehouse, H. H. Iodoform as an internal remedy in lupus erythematosus. (New York Medical Jour., 4 Feb., 1899, vol. lxix., p. 159.)

Wiegand, K. M. A revision of the genus listera. (Bulletin of the Torrey Botanical Club, 1899, vol. xxvi., p. 157.)

—— Some new species from Washington. (*Same*, 1899, vol. xxvi., p. 135.)

Wilder, B. G. A good example of pecilonymy (terminologic inconsistency) [letter to the editor.] (Philadelphia Medical Jour., 19 Nov., 1898, vol. ii., p. 1039.)

—— Report of the majority of the committee on anatomical nomenclature. (Proceedings of the Assoc. of Amer. Anatomists, 1898, vol. xi., p. 40.)

Also in the Philadelphia Medical Jour., 25 Feb., 1899, vol. iii., p. 417; Jour. of Anatomy, April, 1899, N. S. vol. xiii., part 3, p. x.; Jour. of Comparative Neurology, (in part), March, 1899, vol. ix., p. 46; also printed separately.

—— Shall the international equivalent of "Anlage" be primordium or proton? [letter to the editor.] (Science, 2 Dec., 1898, N. S. vol. viii., p. 793.)

—— Some lexicologic corrections and suggestions [letter to the editor]. (Philadelphia Medical Jour., 7 Jan., 1899, vol. iii., p. 8.)

—— Some misapprehensions as to the simplified nomenclature of anatomy; address of the president. (Proceedings of the Assoc. of Amer. Anatomists, 1898, vol. xi., p. 15.)

Also in Science, 21 April, 1899, N. S. vol. ix., p. 566, and separately printed.

Willcox, W. F. Population: Area, population, birthplace, migration and conjugal condition. (Publications of the Amer. Economic Assoc., March, 1899, N. S. no. 2, p. 8.)

In the federal census; essays by members of the Amer. Economic Assoc., collected and edited by a special committee.

Williams, W. L. Enzoötic cerebro-spinal meningitis in horses, and hog cholera, in Idaho. (Annual Report of the Bureau of Animal Industry, 1897, vol. xiv., p. 179.)

—— Hereditary defects of domestic animals. (Country Gentleman, 30 March, 1899, vol. lxiv., p. 252.)

—— A new treatment for bursatte. (Amer. Veterinary Review, Dec., 1898, vol. xxii., p. 637.)

—— Notes on odontomes. (*Same*, May, 1899, vol. xxiii., p. 82.)

—— Veterinary inspection of breeding stallions. (Western Agriculturist, 15 May, 1 June, 1899, vol. xxxi., pp. 147, 162.)

Paper presented at the National Breeders' Meeting at Chicago, March, 1899.

—— *editor*. Proceedings of the United States Veterinary Medical Association. Ithaca, N. Y., 1898. 8°. pp. 233.

—— *translator*. Gebärparese, von J. Schmidt; from Monatshefte für praktische Thierheilkunde. Bd. xi., S. 241. [4 articles.] (Amer. Veterinary Review, Sept.-Dec., 1898, vol. xxii.

Wilson, V. T. The choice and care of drawing instruments. (Sibley Jour., March, 1899, vol. xiii., p. 223.)

Wing, H. H. Gravity or dilution separators. (Cornell University Agricultural Station. Bulletin, Aug., 1898, no. 151, p. 35.)

—— The period of gestation in cows. (*Same*, Feb., 1899, no. 162, p. 325.)

—— *and* **L. Anderson.** Studies in milk secretion drawn from officially authenticated tests of Holstein-Friesian cows. (*Same*, Oct., 1898, no. 152, p. 51.)

—— Studies in milk secretion drawn from the records of the University herd, 1891–1898. (*Same*, May, 1899, no. 169, p. 519.)

Woolsey, G. Articles in Text-book of Anatomy by American authors, edited by F. H. Gerrish, 1899:

The bones, p. 155; The articulations, p. 203; The veins, p. 454.

—— Some points in the treatment of appendicitis when pus is present. (Medical Record, 1 April, 1899, vol. lv., p. 449.)

—— Three cases of pistol-shot wounds of the intestine, with remarks. (New York Medical Jour., June, 1899.)

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